'Then I Found Housing and Everything Changed': Transitions to Rent-Assisted Housing and Diabetes Self-Management

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Abstract

- *Objective: This study draws on qualitative interview data to examine transitions into rent-assisted housing as they relate to diabetes self-management behaviors.*
- *Methods: We conducted qualitative interviews with low-income residents of New Haven, Connecticut, who had a diagnosis of type 2 diabetes. To examine experiences of transition into rent-assisted housing, we drew on interviews with those participants who were living in rent-assisted housing at the baseline interview (n = 18) and participants (n = 5) who transitioned into rent-assisted housing between baseline and a 9-month followup. Interviews probed participants' housing and diabetes experiences. Analysis followed an inductive grounded theory approach.*
- *Results: Our data suggest that improvements in diabetes self-management accompanied the receipt of rental assistance. By providing housing access to those participants who previously had no place of their own, rental assistance facilitated environmental control that supported diabetes routines. By making housing more affordable, rental assistance also improved some participants' ability to afford diabetes-related expenses and mitigated health-demoting financial stress. Additionally, for some participants, rental assistance provided residential stability that facilitated access to health-promoting local social support.*
- *Conclusions: Although more research is needed, these data suggest that expanded access to rental assistance could both improve population health and reduce healthcare spending associated with preventable diabetes-related complications.*

Introduction

The demand for rental assistance in the United States—in the form of rental vouchers, public housing units, and other project-based subsidies—continues to outpace supply (Fischer and Sard, 2017). The U.S. Department of Housing and Urban Development (HUD) currently provides rental assistance to approximately 5 million low-income households (HUD, 2016), representing less than one-fourth of households eligible to receive a subsidy (Alexander et al., 2014). These rental subsidies are a primary source of affordable housing for low-income Americans given an increasingly unaffordable rental market in which most poor renting households spend more than one-half of their income on housing costs (Aurand et al., 2018; Desmond, 2016).

Emerging research suggests that the existing shortage of rental assistance may have health consequences. In particular, using a unique data linkage that combines HUD data with nationally representative health surveys, Fenelon et al. (2017) found that adults living in public housing report better self-rated health and less psychological distress than those who moved into public housing up to 2 years later—the average length of HUD waiting lists for rental assistance. In other work using the same linked data, Simon et al. (2017) found that, relative to future recipients, current recipients of rental assistance are less likely to report unmet needs for health care due to cost. These studies suggest potential health benefits of rental assistance and also health consequences of unmet need for this resource. More research is needed, however, to examine both the causal relationship between rental assistance and health and the processes through which these effects may operate. Additionally, research is needed to examine how rental assistance may affect self-management behaviors and disease trajectories among those living with chronic health conditions.

Type 2 diabetes is one prevalent and costly chronic condition that housing access may affect. In 2015, approximately 22 million American adults had received a diagnosis of type 2 diabetes, representing approximately 9 percent of the adult population (CDC, 2017). Low-income individuals, who are more likely to be struggling with affordable housing problems, experience both a higher prevalence of type 2 diabetes and also disproportionately higher rates of morbidity and mortality associated with diabetes-related complications (CDC, 2017; Lutfey and Freese, 2005; Stevens et al., 2014). To minimize the risk of complications such as kidney, eye, and vascular disease, individuals living with diabetes must carefully manage their blood glucose levels through medication, diet, exercise, glucose monitoring, and healthcare visits (Glasgow, Toobert, and Gillette, 2001). Given these complex and resource-intensive behavioral demands, social conditions play an important role in facilitating or constraining adherence to recommended diabetes self-management routines (Chaufan, Constantino, and Davis, 2012; Lutfey and Freese, 2005; Weaver et al., 2014). Furthermore, given the strong association between daily glucose control and diabetes complications, social conditions that affect self-management behaviors are likely to affect long-term outcomes (Lutfey and Freese, 2005). As such, investments in social resources, such as housing that can improve self-management capacity, may ultimately reduce disease burdens and narrow disparities.

As an important source of affordable housing for low-income households, rental assistance may represent an opportunity to improve both housing access and chronic disease self-management. Rental assistance may affect diabetes management through several mechanisms. First, this assistance can provide a "home" (Dupuis and Thorns, 1998) to individuals who do not have one

because they are homeless or are living in places that they cannot call home. Access to a home can provide autonomy and control over one's environment, which, as prior research indicates, can enable the establishment and maintenance of consistent health routines (Aidala et al., 2005; Padgett, 2007). Second, by making housing affordable, rental assistance may enable individuals to invest more in their diabetes care. Indeed, existing research finds that individuals living in more affordable housing are less likely to miss medications and appointments (Pollack, Griffin, and Lynch, 2010) and that housing cost burdens can make it difficult for individuals to prioritize their health needs (Keene, Guo, and Murrillo, 2018). Finally, by making housing affordable, rental assistance may prevent forced moves that can have negative consequences for health (Desmond and Kimbro, 2015), and enable residential stability that fosters health-promoting social support (Keene, Bader, and Ailshire, 2013).

Despite some research demonstrating the potential importance of housing for individuals with diabetes (Berkowitz et al., 2018; Keene, Guo, and Murillo, 2018; Ludwig et al., 2011; Vijayaraghavan et al., 2011), little is known about the processes through which rental assistance may affect diabetes self-management. In this article, we draw on qualitative interviews to examine how individuals experience transitions from waiting lists into rent-assisted housing and how these experiences may shape participants' diabetes-related behaviors.

Methods

The interviews presented here are part of a qualitative study designed to examine the intersection of housing and diabetes management among low-income individuals. This study took place in New Haven, Connecticut, a city with approximately 130,000 residents that, like many U.S. cities, faces a shortage of both affordable market-rate and rent-assisted units (McDonald and Pething, 2014). In New Haven, 55 percent of renters spend more than 30 percent of their income on rent, and 80 percent of renters in the lowest income quintile are severely cost burdened, spending more than 50 percent of their income on rent (JCHS, 2017). Given these high rents, rental assistance is an important component of New Haven's affordable housing landscape. In 2016, 9,153 New Haven households and 19,221 individuals received HUD-funded rental assistance in the form of Housing Choice Vouchers (HCVs; 5,737 units), traditional public housing (1,840 units), and project-based Section 8 (2,536 units) (HUD, 2016). In 2016, 692 New Haven households also received state-funded long-term rental vouchers through Connecticut's Rental Assistance Program (RAP). The demand for this assistance exceeds supply. Nearly 7,000 households are on waiting lists for public housing in New Haven, and 2,500 households are on waiting lists for vouchers that are currently closed to new applicants (Elm City Communities, 2017).

After obtaining approval from the Yale University Institutional Review Board, we used flyers and snowball sampling to recruit 40 participants who were over age 24, diagnosed with type 2 diabetes, and income eligible for rental assistance. All participants who were either screened or enrolled in the study earned less than 50 percent of the Area Median Income. We selected interview participants following established purposive sampling procedures that aim to diversify the sample according to theoretically relevant factors. Specifically, we constructed our interview sample to include a range of housing experiences (subsidized, unsubsidized, homeless) and treatment regimes.

The interviews followed a semistructured format, relying on an interview guide that included broad and open-ended questions with followup probes. This format ensured that certain topics of interest were covered, but also enabled the interviewer to probe unanticipated themes and to adapt the interview throughout the research process (Corbin and Strauss, 2014; Weiss, 1994). Exhibit 1 describes the primary questions in our interview guide. Approximately 9 months after the baseline interview, 26 members of the sample participated in followup interviews. All data were collected between July 2016 and August 2017. Interviews were audio recorded and transcribed verbatim. They each lasted 45 to 120 minutes, and participants were compensated $50.00 per interview.

To examine experiences of transition into rent-assisted housing, this article draws on interviews with participants who were living in rent-assisted housing at baseline (n = 18) and participants who transitioned into rent-assisted housing between baseline and followup (n = 5). Exhibit 2 provides demographic information for these 23 participants.

Following a grounded theory approach (Corbin and Strauss, 2014), our analysis was an ongoing, iterative process that co-occurred with data collection. We wrote thematic summaries after each interview and memos about developing concepts. We used memos, summaries, and group discussion to iteratively and collaboratively develop a codebook. Using Dedoose software, two coders independently applied the codebook to one-half of the transcripts and resolved inconsistencies through discussion. A single coder then coded the remaining transcripts. For this article, we extracted and reviewed coded data related to (1) moving into subsidized housing, (2) housing affordability, and (3) place-related barriers and place-related facilitators of diabetes self-management. We also reviewed full transcripts to contextualize these excerpts within participants' broader narratives.

Exhibit 1

Semistructured Interview Guide: Primary Questions

Topic	Question
Diabetes care	Can you tell me about when you were first diagnosed with diabetes?
	What are the things that you do to manage your diabetes?
	Are there things that make it harder for you to manage your diabetes? Or things that make it easier?
	Can you tell me a little bit about the people who are involved in your diabetes care?
Diabetes and place	Are there places where it is harder for you to manage your diabetes? Or places where it is easier?
	Tell me a little bit about where you live. (We follow this with a series of probes that capture affordability, stability and quality of current housing and prior housing experiences.)
	What is/was it like to manage your diabetes while living (insert each housing situation)?
	While living (insert housing situation) was there ever a time that it was hard to keep your blood sugar under control? Can you tell me about that time?

Exhibit 2

Participant Baseline Characteristics

Characteristic	n
Age (years, mean)	53
Race	
Black and/or African American	17
White and/or Caucasian	2
Hispanic and/or Latino(a)	1
Multiracial and/or other	3
Gender	
Male	12
Female	11
Ever homeless	
Yes	15
No	8
Rental assistance at baseline	
Yes	18
No[a]	5
Type of rental assistance	
Public housing	12
Housing Choice Voucher	5
Rental Assistance Program voucher	5
Permanent Supportive Housing	1
Using insulin	
Yes	12
No	11

[a] *At baseline, two of these participants were living in subsidized transitional housing programs that provided shared living arrangements. Both moved into long-term and independent rent-assisted housing between baseline and followup.*
Note: N = 23 total participants.

Results

The following sections draw on interview data to describe how transitions to rent-assisted housing may support diabetes self-management in a number of ways, including providing participants with improved control over their housing environment, reducing financial strain, and facilitating housing stability. In presenting these data we use pseudonyms to protect participants' anonymity.

A Home of My Own

The receipt of rental assistance enabled some participants to secure a home of their own, often after years of living with friends, with family members, on the streets, or in homeless shelters. When Regina (age 46) moved into a public housing unit a year before the baseline interview, she received her first set of house keys to a place she could finally call her own. She described her new apartment as a dream come true and as a change that dramatically affected her diabetes self-management. She explained, "Then I found housing. I got housing, everything, my numbers, as far as my health, got back on track. I'm insulin-dependent. I have many medications that I take on a daily basis, but since I've had housing, my diabetes changed. It went from up here to being down here in the right place."

Regina described her new apartment as providing autonomy and control over her environment that helped her to establish and maintain a diabetes routine. In her new apartment, she could keep

her medications in the same place next to her bed and could sit the same chair when she took them each morning. Having her own place also provided her with better control over her diet. She explained, "Not being in my own place, it was hard to try to fight my diabetes and stay healthy and stuff because when you're living with somebody else, it's almost like you have to eat whatever's being made." This changed when she moved into her own apartment. As she noted, "But it's a whole lot different 'cause now, when you in your own place, you can cook that healthy food now, you can have that healthy stuff."

When Monte (age 59) obtained his own public housing unit between baseline and followup, improved control over his environment enabled him to better manage his diabetes. At baseline, Monte lived in a transitional housing building, where he had his own room but shared common spaces. He described how his eating habits changed in his new apartment where he had his own kitchen, noting, "I had better access to a kitchen to prepare my own meals so I wasn't eating meals prepared by other people. So I was a lot more aware of what was going into my meals and how I was preparing them. So that made a big difference."

Monte also described how his new apartment gave him better control over his sleep schedule, enabling him to focus on his diabetes management. He explained, "Being able to sleep and not be stressed is a definite mind-changer. Changes the outlook and attitude. Gives me the opportunity to reflect in my own way and my own time to get things done the way I wanna get them done, the way I feel comfortable doing things. Makes a big difference, makes a big difference." After Monte moved into his own apartment, his Hemoglobin A1C, a measure of average blood glucose, fell so dramatically that his doctor, not believing the result, repeated the blood test.

Homeless participants, whose receipt of rental assistance enabled them to move off the streets or out of emergency shelters, described particularly dramatic improvements in their diabetes management associated with these moves. For example, Tory (age 39) lived in shelters and on the streets before receiving an RAP voucher from the state of Connecticut and moving into his own apartment 4 months before the baseline interview. He noted, "It was harder when I was homeless because like I said kitchens, the shelters, they feed you pasta. And if you out there all day and didn't eat nothing, you eat whatever they give you. … Like I said, once I got the apartment I was like, 'Okay.'"

In addition to dietary improvements, formerly homeless participants noted that the receipt of rental assistance improved their medication adherence. Participants described many challenges of storing and taking medication in emergency homeless shelters. For example, Myron (age 57), who spent many months on the street and in homeless shelters, explained, "I had a problem with my medicine. I kept it in storage because I didn't trust the shelter. People steal stuff all the time in there." While living in a homeless shelter, Mike (age 60) often stored his medications with shelter staff but could not always retrieve them as needed. He also recounted an instance where staff lost his medications and another time when his medications were confiscated on entering the shelter. Mike's control over his medication improved dramatically when he moved to his own subsidized permanent supportive housing unit. He explained, "But now it's nice I've got all my [medications] now on my dresser drawer, everything that I need and I just take with me what I need for the day."

Not all participants associated the receipt of rental assistance with improvements in their diabetes management. Some, who moved from other stable housing arrangements, did not perceive a change.

One participant even noted a loss of social support associated with her move from her mother's apartment to her own public housing unit. Participants whose prior housing did not provide autonomy, however, nearly universally described positive health impacts of rental assistance receipt.

An Affordable Place To Live

Participants also described how rental assistance improved housing affordability with positive implications for their diabetes self-management. For example, prior to receiving a state-funded rental assistance voucher, Melvin struggled to pay the rent, sometimes at the expense of eating well. Melvin explained, "It was hard because, number one, we wanted to make sure the rent was paid. Now it don't make no difference having all this food and all this stuff when you ain't got a place to stay." In his new rent-assisted apartment, Melvin was very careful about his diet, prepared his own meals, and ate recommended proteins such as salmon. When asked about his diet before receiving the rental assistance voucher, he explained, "Oh no, ain't eat no salmon. Tuna fish in a can… Oodles of noodles, chop hot dogs up in them, or something like that." In addition to providing more room in his budget for nutritious food, Melvin described a reduction in financial stress that he perceived to positively affect his diabetes. He noted, "Shoot, I think it [the voucher] made my diabetes better.… Less stress."

Janet (age 57) also described a reduction in financial stress associated with the HCV that she had been receiving for 8 years. She explained, "But I'm not stressed on finances because of my Section 8, my rent is like really—this apartment is $1,300 a month. My portion is like maybe 260 which is a blessing." Janet, who was a student at a local community college, also discussed how financial stress could interfere with her medication adherence. For example, the day before the interview she missed her medication dose amidst stress related to her financial aid. She explained, "then I find out that I don't got no books because I don't got financial aid, so my stress level went here. And everything that I needed to do for Janet went out the door. I got so overwhelmed."

Although participants like Janet and Melvin experienced rent decreases when they received rent assistance, for others rent was a new expense. For example, prior to moving into her subsidized unit, Jamie was living with her daughter, where she did not pay rent. Although Myron also did not pay rent in the shelter where he previously lived, he nonetheless attributed budgetary improvements to his public housing unit. When he was homeless, he paid for a monthly storage locker, a car, and frequent meals out. In his new apartment, he prepared his own meals, dramatically reducing his food budget, and gave the car to his ex-wife, who took over the payments. His downtown public housing building enabled him to walk or take the bus everywhere. He also described better control over his finances in general, noting, "Since I moved in, it's just a little better organized in my head so I can budget better."

Although Myron still struggled to make ends meet, occasionally running out of food at the end of the month or owing the pharmacy for his medication copayment, he was able to invest more in his diabetes care. For example, he shopped for protein-rich foods and bought a used bicycle that he rode for exercise. In general, Myron noted the importance of housing that is both stable and affordable, stating, "Again, it's the affordable part of affordable housing that's a blessing. Not being able to afford where you live is a nightmare, without having that stable place where you know you can get rest and get yourself together."

A Stable Place To Live

Increased affordability can prevent evictions as well as stress related to the threat of a forced move, both of which can be disruptive to diabetes routines. Indeed, some participants described feeling safe from eviction in their rent-assisted housing. For example, Bella (age 55) noted that she was "totally secure" in her HCV-supported unit, in which she had lived for 5 years. Regina also described this sense of security and rootedness in her public housing unit. She explained, "This is my last stop home. This is my retirement home. This is gonna be the last place. I'm not going anywhere else because why would I move and give up the luxury of having to pay only $59 and everything is included?… I feel safe here. I don't wanna move anywhere else. So for the next 5 years, if we stay in contact, this is where you'll be coming to see me 'cause this is where I'll be."

In addition to supporting consistent diabetes routines, this residential stability may also enable individuals to establish local social support networks that are health promoting. For example, Marcus (age 62), who had lived in his public housing unit for 1 year, described drawing on support from Myron, who lived in the same building. This support became particularly valuable after Marcus had a heart attack between the first and second interview. He explained, "between my brother and Myron, they took care of everything that had to be done.… Like if I needed something to eat, they wouldn't let me eat nothing out of the way. I had to eat salads… and I just considered myself really blessed that I had people around me that took care of me." Marcus described Myron as a source of support for other residents as well, noting, "...he looks out for everybody. He's a real good guy."

Although rental assistance could provide health-promoting stability, the initial receipt of assistance was nearly always associated with a move. For some participants, this move temporarily disrupted self-management routines. For example, Michelle (age 47) moved to a public housing unit between baseline and followup, from a room that she was renting from a friend. Directly after moving to her new unit, Michelle was admitted to the hospital with very high blood sugar. She described being tired from the move, not taking her medications, and turning away the visiting nurse who helped her daily. When Michelle moved to her new place, she also no longer had support from family members living nearby. By the second interview, however, Michelle seemed to have adjusted to her new apartment and had developed sources of support in her new building, including from a neighbor who drove her to the interview. She also described an overall improvement in her diabetes self-management. Although she had been in and out of the hospital prior to moving, during the 8 months spent in her new apartment, her only admission was the one directly following her move.

Discussion

Participants' narratives suggest that the receipt of rental assistance can support improvements in diabetes self-management. In some cases, rental assistance provided housing access to those participants who previously had no place of their own, in turn providing autonomy and environmental control that facilitated dietary and medication regimes. It also improved some participants' finances, enabling them to invest more in their diabetes-related expenses and mitigating financial

stress. Finally, although moves associated with the receipt of rental assistance could temporarily disrupt diabetes routines, participants' narratives suggest that, in the long run, this assistance may facilitate residential stability and associated access to health-promoting social support.

Our data also point to important variation in participants' experiences of rental assistance receipt. In particular, this experience, and its implications for diabetes self-management, seemed to be shaped by participants' previous housing situation. Not surprisingly, individuals whose rent assistance enabled them to move off the streets or out of emergency homeless shelters described particularly dramatic changes in dietary and medication regimes. Many participants, however, who were not previously homeless but were struggling with inadequate or unaffordable housing, also described significant benefits of rental assistance for their diabetes management. A few participants described a loss of social support or experienced disruptions in their routine in the period immediately following a move into rent-assisted housing. In this sense, our data suggest the potential utility of developing programs that can provide extra support to new recipients of rental assistance, particularly those who have chronic health conditions, during the potentially vulnerable period surrounding a move.

The implications of rental assistance for diabetes self-management may also vary depending on individuals' access to affordable medical care. Many participants in our study had virtually no healthcare expenses as a result of their Medicaid coverage, which was accessible to many because of Connecticut's expansion of Medicaid through the Affordable Care Act. For individuals living in states with more limited access to Medicaid coverage, the challenges of managing diabetes without rental assistance may be greater. Access to stable and affordable housing may also better position individuals to benefit from the medical care that they receive, and more research is needed to better understand this intersection.

Although our findings suggest benefits of rental assistance for type 2 diabetes management, our qualitative study was designed to examine processes rather than to estimate causal effects. As with most qualitative studies, our sample size and design limits our ability to make population level generalizations. Furthermore, our small sample limits our ability to fully examine variations in the experience of rental assistance receipt across personal characteristics. It is also unclear to what extent the experiences of this sample of New Haven residents would be transferable to other settings or to other low-income renters within New Haven who may not be represented in our study. Additionally, our study is limited by drawing primarily on retrospective accounts of transition from waiting lists to rent-assisted housing. Although many of these retrospective accounts provided rich detail about this transition, future longitudinal studies that can prospectively observe the receipt of rental assistance will be an important addition to the literature. Finally, future research that moves beyond self-report to assess objective measures of diabetes self-management and control is needed to estimate and quantify the potential population health impact of rental assistance for individuals living with type 2 diabetes and other behaviorally managed chronic conditions.

Nonetheless, the qualitative data presented here illustrate numerous plausible pathways through which rental assistance may operate to improve diabetes self-management and ultimately long-term diabetes outcomes. Although more research is needed, these data suggest that expanded access to rental assistance could both improve population health and reduce the large existing costs

preventable diabetes-related complications (Yang et al., 2013). The cost savings associated with preventing large and unnecessary downstream healthcare costs may offset costs associated with expanding rental assistance programs (Sandel and Desmond, 2017).

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