The Effects of Rental Assistance on Housing Stability, Quality, Autonomy, and Affordability

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Abstract

Federal rental assistance is an important source of affordable housing for low income households, given a growing and severe affordable housing crisis. However, few studies have examined the extent to which rental assistance may improve housing access. This paper examines associations between rental assistance receipt and four dimensions of housing: quality, stability, autonomy and affordability. We draw on data from a longitudinal cohort study of low-income adults in New Haven, Connecticut and use Generalized Estimating Equations to examine associations between rental assistance receipt and housing measures. We find that participants receiving rental assistance had lower odds of reporting housing instability, low quality housing, lack of autonomy related to housing, and some measures of housing unaffordability compared to those not receiving assistance. The large and highly significant effects remain after adjusting for demographic variables and factors that can impact access to rental assistance.

Introduction

Low-income US Households have seen housing costs grow dramatically while their incomes have plateaued or declined, leading to a severe shortage of affordable housing (Sandel and Desmond 2017; Desmond 2018). According to the U.S. Department of Housing and Urban Development (HUD), affordable housing should cost no more than 30 percent of a household's income. Households paying above about 30 percent are considered cost burdened (HUD 2020). Approximately 40 percent of Americans making 80 percent or less of the local median income are severely cost burdened, spending more than 50 percent of their income on housing (Center on Budget Policy and Priorities 2019). HUD funded rental assistance, in the form of project-based and voucher-based subsidies, is an important source of affordable housing for this group. However, due to supply constraints and lack of funding, fewer than one in four eligible households currently receives this assistance (Collinson, Ellen, and Ludwig 2015; Fischer and Sard 2017). A growing body of research indicates that this unmet need for rental assistance may be detrimental to the health and well-being

of millions of Americans who would benefit from this resource but are unable to access it (Kim, Burgard, and Seefeldt 2017; Desmond 2018; Swope and Hernández 2019; Keene et al. 2020).

Rental assistance is designed to increase access to housing, for people who would otherwise be unable to afford it, by limiting a tenants' rent to approximately 30 percent of their income. The US Department of Housing and Urban Development (HUD) provides housing assistance to approximately five million families in two forms: project-based assistance and tenant-based assistance (Center on Budget and Policy Priorities 2019). Project-based housing includes public housing developments that are operated by local housing authorities, as well as privately owned affordable units and developments that are subsidized through grants to their owners. Tenant-based housing is provided in the form of Housing Choice Vouchers (HCVs), formerly called Section 8 Vouchers, which are issued to tenants to subsidize private market rent. These rental assistance programs, available to families earning below 50 percent of the area median income, make housing affordable by setting a tenant's rent at approximately 30 percent of their income.

By making housing affordable, rental assistance may also allow households to access safer and better quality housing, prevent evictions and forced moves, prevent doubling up and crowding, and provide individuals with more control over their home environment. Though recipients of rental assistance may still face a number of housing challenges (Ellen 2018), on balance, because their rent is subsidized, rent-assisted households are likely to have more options than those who are waiting for these subsidies. As such, recipients of rental assistance may also have higher quality housing than those on waitlists, despite common narratives of poor quality rent-assisted housing (Buron, Kaul, and Patterson 2003). However, more research is needed to examine the effects of rental assistance receipt on these dimensions of housing access. Thus, the purpose of this study is to examine the relationship between rental assistance receipt and four dimensions of housing access that are associated with well-being: housing stability, housing quality, housing autonomy, and housing affordability (Keene et al. 2018; Swope and Hernández 2019). To do this, we use data from JustHouHS, a longitudinal cohort study of 400 low-income adults in New Haven, CT. We test the hypothesis that individuals on the waitlist for rental assistance will report less housing stability, lower housing quality, less autonomy related to housing, and more challenges with housing affordability compared to those receiving assistance.

Previous Research

Some prior research suggests that by making housing affordable, rental assistance may improve access to several aspects of housing that are important to health and well-being. First, some evidence indicates that rental assistance can improve housing stability and prevent evictions and forced moves (Desmond 2018; Swope and Hernández 2019). One study examining the association between rental assistance and change in housing stability among renters in the wake of the Great Recession found that receiving rental assistance reduced the chance of experiencing cost related moves, evictions, and homelessness (Kim, Burgard, and Seefeldt 2017). Similarly, another recent study found lower rates of eviction among households receiving rental assistance compared to similar households below 200

percent of the poverty line that were not receiving rental assistance. (Lundberg et al. 2019). Other research finds that only public housing (not vouchers) reduced the overall number of moves that households experienced (Geller and Curtis 2011; Geller and Franklin 2014; Gold 2018). One explanation for these findings may be that tenant-based assistance, in the form of vouchers, gives households the opportunity to move voluntarily by creating more affordable housing options. While the existing literature has focused on the effects of rental assistance on actual moves, to our knowledge, no research has examined the effects of rental assistance on subjective sense of stability, which may also have implications for health and well-being (Suglia, Duarte, and Sandel 2011; Fenelon et al. 2018; Keene et al. 2018).

In addition to preventing housing instability, some existing evidence suggests that rental assistance may facilitate access to better quality housing than recipients could otherwise afford (Sharfstein et al. 2001; Ahrens et al. 2016). For example, one study found that voucher holders were more likely to report high or adequate quality housing than a matched control group of unassisted renters (Buron, Kaul, and Patterson 2003). Another study compared children in rent assisted households with an unassisted control group and found that the former had lower blood lead levels, suggesting less exposure to lead paint in rent assisted housing (Ahrens et al. 2016). In contrast, the findings of a more recent study suggest that the quality of assisted and unassisted housing are comparable (Newman and Holupka 2018).

Largely unexplored in the existing literature is the relationship between rental assistance and autonomy. Autonomy includes volitional actions and the sense of self-motivation behind those actions, which scholars have argued is a vital human need (Marbell-Pierre et al. 2019). Housing autonomy may encompass both the ability to control one's current living conditions (for example, being able to control noise levels or the use of space) and the ability to control mobility (for example, choosing to move from undesirable housing or to avoid forced moves). In the latter case, the concept of autonomy adds to our understanding of residential stability. In a qualitative study of rental assistance and diabetes self-management, Keene and colleagues (2018) found that rental assistance provided some participants with control over their living situation and daily routines by allowing them to afford their own housing instead of having to share housing. Another study suggested that housing vouchers reduced crowding and the shared housing arrangements that individuals often use to reduce the financial burden of housing costs (Wood, Turnham, and Mills 2008). These few studies suggest that rental assistance may improve housing autonomy by providing tenants with control over their living spaces. However, to our knowledge, no research has examined relationships between rental assistance receipt and indicators of housing autonomy.

Finally, by holding rent at approximately thirty percent of an individual's income, rental assistance is designed to make housing more affordable. As expected, the large body of evidence on housing affordability indicates that rental assistance does indeed make housing more affordable for low income renters (Kutty 2005; Wood, Turnham, and Mills 2008; Getsinger et al. 2017). Furthermore, some research suggests that the receipt of rental assistance can reduce the likelihood that renters with incomes near the poverty line will fall into housing-induced poverty (Kutty 2005).

Each of the four housing dimensions investigated contribute to health (Braverman et al. 2011; Keene et al. 2018; Taylor 2018). For example, studies suggest that housing instability is associated with limited health care access, poor mental health outcomes, and poorer self-rated health (Reid, Vittinghoff, and Kushel 2008; Keene and Geronimus 2011; Suglia, Duarte, and Sandel 2011; Jaworsky et al. 2016; Swope and Hernández 2019). Poor housing conditions are associated with pests, which can trigger attacks of allergic sensitization and asthma (Olmedo et al. 2011; Do, Zhao, and Gao 2016); dampness and mold negatively impact respiratory health and mental health (Institute of Medicine 2004); and a variety of other harmful environmental exposures including lead, can cause significant and irreversible adverse health effects (CDC 2012). Some research finds that housing autonomy can facilitate control over one's environment, which can capacitate the creation and maintenance of consistent health routines (Aidala et al. 2005; Padgett 2007). Furthermore, unaffordable housing is associated with poorer-self rated health, hypertension, arthritis, and poor mental health (Pollack, Griffin, and Lynch 2010; Bentley et al. 2011; Burgard, Seefeldt, and Zelner 2012; Meltzer and Schwartz 2016) and worrying about having enough money to pay rent is associated with depression and frequent mental distress (Burgard, Seefeldt, and Zelner 2012). Therefore, understanding the link between rental assistance and these housing dimensions can further our knowledge about the potential health benefits of rental assistance programs. Indeed, an emerging body of research suggests that rental assistance may have positive impacts for health (Fenelon et al. 2017; Fenelon et al. 2018; Slopen et al. 2018; Keene et al. 2020).

Research on the housing impacts of rental assistance is largely limited to single outcomes (Buron, Kaul, and Patterson 2003; Wood, Turnham, and Mills 2008; Kim, Burgard, and Seefeldt 2017; Newman and Holupka 2018), and the findings have, in some cases, been inconsistent (Buron, Kaul, and Patterson 2003; Newman and Holupka 2018). In the current study we extend the research on the impact of rental assistance on housing access, by examining multiple dimensions of housing including stability, quality, and affordability, and using comprehensive measures across these outcomes. We also use a waitlist comparison group to partially account for unobserved differences between households that do and do not receive rental assistance, a limitation of some existing research.

Methods

Study design and setting:

Data utilized in this analysis is drawn from JustHouHS, which was conducted in New Haven, Connecticut. The city of New Haven has approximately 130,000 residents (U.S. Census Bureau 2019), and, like many other cities throughout the United States, is experiencing a shortage of affordable housing. In 2016, over half of renters in New Haven spent more than thirty percent of their incomes on rent, and eighty percent of those in the lowest quintile spent more than fifty percent of their income on rent (Abraham et al. 2019).

Rental assistance is a key component of New Haven's affordable housing landscape (Keene et al. 2020). In 2019, 9,111 New Haven households and 19,267 individuals received HUD funded rental assistance in the form of Housing Choice Vouchers, traditional public housing, and project-based Section 8 (Office of Policy and Development Research 2020). The state

of Connecticut also provides rental assistance through the Rent Assistance Program (RAP) in the form of housing certificates for families with very low incomes, administered by the Connecticut Department of Housing. Some New Haven residents receive other kinds of rental assistance, often through HUD, in the form of long-term supportive housing programs specifically for individuals living with HIV/AIDS, recovering from addiction, with a mental illness, or who are chronically homeless.

The JustHouHS study, includes a survey of low-income residents of New Haven designed to explore the intersection of housing, mass incarceration, and health. All data collection and recruitment procedures were approved by the Yale Institutional Review Board. JustHouHS utilized flyers posted in the community (e.g. bus stops, clinics, public libraries), outreach from service providers, and snow-ball sampling to recruit participants. Participation in the study was restricted to individuals who were 18 years of age or older, residents of the city of New Haven. In order to obtain a low-income sample, eligibility was further restricted to individuals who either 1) had received food or rental assistance in the past year, 2) were a Medicaid recipient, 3) were experiencing homelessness, or 4) resided in census tracks where more than twenty percent of residents lived below the federal poverty level. As one of the study's main interests was the intersection of mass incarceration and health, the sample was stratified to include 200 individuals who were released from jail or prison in the previous year and 200 individuals who had not been incarcerated in the past year but who may have had prior histories with incarceration. Data from the Connecticut Department of Corrections was used to verify incarceration history. Individuals who were interested in participation (N=616) contacted the study office and completed eligibility screening either by phone or in person. Eligible participants were enrolled until their arm of the study was full.

Data collection:

Qualtrics surveys, which took between one and two hours, were completed by participants in the study office. Participants received a $50 gift card as compensation. The analyses presented in this paper rely on survey data from four waves of the study collected between October 2017 and October 2019. Four-hundred participants completed the baseline survey. The first follow-up survey had an eighty percent retention rate. The second and third follow-up surveys each had a seventy-eight percent retention rate from baseline

Measures:

The primary independent variables are measures of current rental assistance status. Three mutually exclusive categories were created: those receiving any form of rental assistance, those on a waitlist for assistance and not currently receiving another form of assistance, and those who are neither receiving assistance nor on a waitlist. While previous studies suggest that the use of self-report of rental assistance may be unreliable (Boudreaux, Fenelon, and Slopen 2018), this finding may be due to inconsistent terms used by individuals to describe participation in rental assistance programs. To improve reporting consistency and decrease confusion for participants, JustHouHS asked participants if they have ever applied for or were currently receiving each of the specific forms of rental assistance that are available to residents of New Haven.

A variety of dependent variables were tested relating to housing stability, housing quality, autonomy related to housing, and housing affordability. To evaluate housing stability, three different survey questions were used. One asked participants "How do you feel about your current housing situation? Do you feel…very stable and secure, fairly stable, just somewhat stable, fairly unstable, or very unstable?" We dichotomized the responses to examine the odds of feeling unstably housed. We classified responses of "just somewhat stable," "fairly unstable," and "very unstable" as unstable and all others as stable. Another question asked participants "Do you worry about being evicted from the place that you live: always, often, sometimes, rarely, or never." We dichotomized responses to investigate the odds of reporting worrying about eviction "always" or "often." The third survey question asked participants to respond to the statement "My place is only temporary: agree, somewhat agree, somewhat disagree, disagree." Responses were dichotomized to explore the odds of participants agreeing or somewhat agreeing to this statement. These subjective measures of stability may capture the stress that individuals feel about the possibility of moving or eviction.

Two survey questions were used to evaluate housing quality. Participants were asked to respond to the statement "I am satisfied with my current housing: agree, somewhat agree, somewhat disagree, disagree." Responses were dichotomized to explore the odds of participants somewhat disagreeing or disagreeing. Another survey question asked participants "Overall, how would you describe the conditions of the place you stay: excellent, good, average, poor." To investigate the odds of participants describing their housing as "poor" relative to all other categories, responses were dichotomized.

We used two variables to assess housing autonomy. To examine the ability of participants to have control over their place of residence, they were asked to respond to the statement "I wish to move but am unable to: agree, somewhat agree, somewhat disagree, disagree." Responses to this statement were dichotomized to analyze the odds of agreeing or somewhat agreeing to the statement relative to disagreeing or somewhat disagreeing. To capture the capacity of participants to determine their own daily routines, they were asked to respond to the statement "I am able to sleep when I want: always, some of the time, rarely, never." We dichotomized responses to this statement to explore the odds of reporting "rarely" or "never" being able to sleep when desired relative to the other categories.

Two variables were used to investigate housing affordability. Participants were asked "In the last six months have you had any utilities (gas, electric, water) shut off due to non-payment?" We examined the odds of experiencing a utility shutoff relative to not experiencing a utility shut off in the past six months. Additionally, we asked participants "Do you worry about being able to pay the rent or mortgage each month: always, often, sometimes, rarely, never?" We dichotomized responses to this statement to explore the odds of reporting "always" or "often" worrying about this topic relative to the other categories.

In the analysis, we included other factors that may affect an individual's probability of receiving rental assistance. As some housing is specifically designated for individuals with disabilities, having a documented disability may provide increased access to rental assistance (Helms, Sperling, and Steffer 2017). We adjusted for disability status using a

sequence of questions. In baseline data collection individuals were first asked if they had "ever applied for disability from the Social Security Administration" and then asked whether this application had ever been approved. A measure of age as a continuous variable was included as older adults may have increased access to public housing as some public housing is specifically designated for seniors and thus unavailable to younger adults (Hudson 2005). A measure of whether participants live with children under the age of eighteen was also included as this factor can lead to preferential receipt of rental assistance (Moore 2016).

Factors that may act as barriers to receipt of rental assistance were also included in analysis. Having a history of involvement with the carceral system, has been shown to create real and perceived barriers to obtaining rental assistance (Curtis, Garlington, and Schottenfeld 2013; Keene et al. 2018). Two measures were included to account for these barriers. One measure was being released from prison in the last two years at baseline or in the past six months during the follow up data collection to account for people who were incarcerated and released during the study period. The other measure of involvement with the carceral system was whether the individual has ever been convicted of a felony. Reported drug use in the last thirty days was included as the final factor that could create a barrier to receipt of rental assistance

Demographic variables related to rental assistance were also included. We assessed race using one question that asks participants about their racial identify. A different question asking participants if they identified as Hispanic or Latino assessed ethnicity. Employment is reported as a dichotomous variable of any versus no employment in the past six months.

Analyses:

First, we compared the characteristics of rent-assisted, waitlisted, and neither rent-assisted nor waitlisted groups (referred to from here on as "neither"). We used ANOVA to test for statistical significance across groups. Next, we used Generalized Estimating Equations (GEE) to model the predictors of our outcome variables over four waves of the study. The GEE method accounts for the non-independence of repeated data from the same subject. We did not assume an equal correlation between responses from the same subject, so we fitted an unstructured correlation structure. Outcome variables were dichotomous and were modelled assuming a binomial distribution. SAS v.9.4 was used to run the models (SAS, 2020). The effect of time was modelled using study waves.

We undertook the analysis in three stages. First, we examined our outcome variables as a function of waitlist status (model 1). Then, we added basic demographic factors (model 2). Finally, we included additional factors that may impact access to rental assistance (model 3).

Results

Table 1 describes the sample at baseline and differences between the rent-assisted, waitlisted, and the "neither" group. Of the 400 participants at baseline, 81 received rental assistance, 100 were waitlisted, and 219 were neither rent assisted nor on a waitlist. The average age of participants in the study was 44.8 years old. The groups differed significantly by age, with the rental assistance group being older, on average. This likely reflects

increased access to public housing among seniors due to specially designated public housing for this age cohort. Just over two-thirds of the sample is male, which likely reflects the study's over-sampling of recently incarcerated individuals. A significant gender difference exists between groups with men making up the majority of the waitlisted and "neither" groups and women making up the majority of the rent-assisted group. The groups had a similar racial and ethnic composition. However, non-Hispanic White participants were concentrated in the "neither" group. About half of the participants were employed with no significant difference between the groups. Nearly one-fourth of the sample had their most recent application for disability benefits approved, and receipt of disability benefits was significantly more common among participants receiving rental assistance. The presence of children in the household was not significantly different between the groups.

Given the study's oversampling of recently incarcerated individuals, previous involvement with the carceral system was very common with 52.5 percent of the participants in the study at baseline reporting being incarcerated in the past two years and 63.5 percent reporting any prior felony convictions. Prior involvement in the carceral system, as expected, varied significantly across the three groups. The majority of those in the waitlist and "neither" groups reported recent incarceration compared to only 18.5 percent of those receiving assistance. Similarly, the majority of those in the waitlist and "neither" groups had reported a felony conviction compared to 44.4 percent of those receiving assistance. There were no significant differences between the groups in reported drug use in the past thirty days, with approximately one-fourth of the sample reporting recent drug use.

Table 2 presents results from GEE models predicting measures of housing stability as a function of rental assistance status. In the unadjusted model (model 1) there were significant differences between the rent assisted, waitlisted, and "neither" groups across all outcome variables relating to housing stability. The significant differences between the groups remained in model 2, which adjusted for basic demographics and in model 3, which added other variables that can affect receipt of rental assistance. In the fully adjusted model (model 3), individuals on the waitlist and in the "neither" group had, respectively, four times higher (OR = 4.19, 95% CI, 2.81-6.24) and two times higher odds (OR = 2.24, 95% CI, 1.57-3.19) of feeling unstably housed compared to those receiving rental assistance. In the fully adjusted model, compared to those receiving rental assistance, individuals on the waitlist and in the "neither" group had, respectively, four times higher (OR = 4.17, 95% CI, 2.44-7.12) and two times higher odds (OR = 2.15, 95% CI, 1.25-3.67) of worrying about eviction always or often. Finally, individuals in the waitlist and in the "neither" group had, respectively, four times (OR = 4.18, 95% CI, 2.81-6.22) and three times the odds (OR = 3.08, 95% CI, 2.17-4.38) of viewing their current place as only temporary compared to those receiving rental assistance in the fully adjusted model.

Table 3 displays the results from GEE models predicting measures of housing quality as a function of rental assistance status. Model 1 shows significant differences between the rent assisted, waitlisted, and "neither" group across all of the outcome variables related to housing quality. The significant differences between the groups remained in models 2 and 3. In the fully adjusted model, compared to those receiving rental assistance, participants on the waitlist and in the "neither" group had, respectively, four times higher (OR = 4.04,

95% CI, 2.75-5.95) and two times higher odds (OR =2.60, 95% CI, 1.83-3.71) of feeling unsatisfied with their current housing. In the fully adjusted model, both participants on the waitlist and those in the "neither" group had just over twice the odds (OR = 2.41, 95% CI, 1.27-4.55 and OR = 2.11, 95% CI, 1.98-3.71, respectively) of reporting the conditions of the place they stay as poor compared to those receiving rental assistance.

Table 4 displays results from GEE models predicting measures of housing autonomy as a function of rental assistance. Significant differences between the groups were found in model 1 and remained in both adjusted models. Compared to those receiving assistance, individuals on the waitlist and in the "neither" group had, respectively, just under three times higher (OR = 2.96, 95% CI, 1.99-4.41) and two times higher odds (OR = 2.38, 95% CI 1.66-3.43) of wishing to move but feeling unable to in the fully adjusted model. In the fully adjusted model, individuals on the waitlist and in the "neither" group had, respectively, two times higher (OR = 2.74, 95% CI, 1.55-4.85) and nearly two times higher odds (OR = 1.97, 95% CI = 1.15-3.35) of rarely or never being able to sleep when they wanted compared to those receiving assistance.

Table 5 displays the results from GEE models predicting measures of housing affordability as a function of rental assistance status. The odds of worrying about paying rent or a mortgage always or often differed significantly between the rent assisted, waitlisted, and "neither" group across all three models. Compared to those receiving assistance, participants on the waitlist and in the "neither" group had, respectively, two times higher (OR = 2.86, 95% CI, 1.66-4.93) and just under two times higher odds (OR = 1.98, 95% CI, 1.25-3.13) of worrying about paying rent or a mortgage in the fully adjusted model. The odds of having a utility shut off in the past months did not differ significantly between the groups in any model.

Discussion

In the analysis of data from New Haven residents who participated in the JustHouHS survey over four waves, we found that participants who were receiving rental assistance had lower odds of reporting housing instability, low quality housing, lack of autonomy related to housing, and some measures of housing unaffordability compared to those on waiting lists and those who were neither receiving housing nor on waiting lists. The large and highly significant effects remained after adjusting for demographic variables and factors that can impact access to rental assistance such as recent employment, disability, having children in the household, recent drug use, a prior felony conviction, and recent incarceration. These findings serve to counter the narrative that rent-assisted housing is low quality and negatively impacts recipients (Semuels 2015). While it is true that people receiving rental assistance do not always have access to the best housing stock (Ellen 2018), we found that people receiving assistance had significantly better outcomes across nearly all measures explored here compared to those on the waitlist for assistance and those not receiving assistance. Our findings are consistent with some prior studies that have found that rental assistance may improve housing outcomes (Buron, Kaul, and Patterson 2003; Ahrens et al. 2016; Kim, Burgard and Seefeldt, 2017).

In our analysis, we found that rent-assisted individuals had better housing outcomes than both waitlisted individuals and individuals who were neither on waiting lists nor receiving rental assistance. Our use of a waitlist comparison group allows us to compare individuals who receive rental assistance with similar individuals who would be likely to receive rental assistance were it not for the supply shortage of this resource. Nationally, individuals applying for rental assistance spend, on average, over two years on the waitlist, but some localities have longer wait times and others are no longer accepting new applicants (Fischer and Sard 2017). However, given that up to forty percent of low-income individuals (those earning less than 80 percent of the Area Median Income) in the United States are severely rent burdened and most do not receive assistance (Center on Budget and Policy Priorities 2019), the unmet need for rental assistance may include nearly all low-income renters, even those who are not currently on a waitlist. This may explain why we observe worse housing outcomes among the "neither" group, relative to those who receive rental assistance. While some individuals in this "neither" group may have acceptable unassisted housing, many may stand to benefit from rental assistance yet face application or eligibility barriers (Geller and Curtis 2011; Quinn et al. 2014). Comparisons between this neither group and those who are receiving assistance are difficult to interpret. Factors that create barriers to applying for rental assistance, such as criminal justice involvement, may also create barriers to private market housing. However, some barriers to assistance, such as closed waiting lists, may be exogenous to the individual. More research is needed to understand the extent to which unmet need for rental assistance may adversely affect those who are not on waiting lists. Such research would also require a deeper examination of the barriers that individuals face in applying for rental assistance.

One common barrier to applying for or receiving rental assistance explored in this sample is involvement with the carceral system. A qualitative study that explored navigating access to rental assistance after prison found that recently incarcerated individuals often believe that they are not eligible for rental assistance (Keene et al. 2018). Other studies confirm the difficulties that recently incarcerated individuals often contend with when trying to access this resource within a system that frequently determines eligibility on a case-by-case basis (Dickson-Gomez et al. 2007; Quinn et al. 2014; Keene et al. 2018). We did not find that controlling for variables related to criminal justice involvement (felony convictions or recent incarcerations) significantly changed the observed association between rental assistance and housing stability, quality, affordability, or autonomy. Furthermore, in additional analyses (results not shown), the relationship between rental assistance receipt and housing outcomes remained when only using data from those without recent incarceration histories. Thus, our analyses suggest that rental assistance may be beneficial regardless of prior involvement with the carceral system. However, we did find that, independent of rental assistance status, recently incarcerated individuals were 67 percent more likely to view their current place as only temporary compared to those who had not been recently incarcerated. This may indicate that other forms of support in addition to rental assistance are needed to increase housing stability for this group.

Our findings that rental assistance is associated with improved access to acceptable housing, may also have implications for health and well-being. A recent study using these data found a positive association between rental assistance and better self-rated health. Other

research finds associations between rental assistance and improved child and adult health in nationally representative samples (Meltzer and Schwartz 2016; Fenelon et al. 2017; 2018; Slopen et al. 2018; Boudreaux et al. 2020). By examining housing characteristics, our paper identifies some of the possible mechanisms through which receipt of rental assistance may lead to better health. In exploring some of the mechanisms through which rental assistance may be related to better health, this paper also contributes to the increasing literature on the potential health costs of unmet need for this vital resource (Sharfstein et al. 2001; Sandel and Desmond 2017; Keene et al. 2018).

When interpreting the findings of this paper, there are some limitations to consider. While the waitlisted and "neither" groups act as useful controls of individuals who are similar to those receiving rental assistance, unobserved difference between these groups may exist due to potential prioritization of some households over others or to possible eligibility barriers that may arise between time of rental assistance application and receiving housing. In particular, individuals with criminal justice histories may face barriers to both quality private market housing and rental assistance. While controlling for incarceration history and felony conviction did not affect our findings, there may be unobserved differences related to criminal justice histories that are not captured by these variables. Furthermore, there may be cohort differences between those who received rental assistance in an era when this resource was more available, and those who are currently waiting for it. Nevertheless, the findings of this study remain statistically significant and large even after controlling for various factors that may affect access to rental assistance.

Furthermore, the ability to infer causality is precluded by the cross-sectional nature of the analyses. The possibility of reverse causality cannot be ruled out. It is possible that those who are more stably housed, have better quality and more affordable homes, and more autonomy have more bandwidth to apply for rental assistance and are thus more likely to have this resource. Additional longitudinal research is needed to address the possibility of reverse causality.

Furthermore, this sample is not representative of rental assistance recipients and applicants in New Haven or nationally. The sample receiving rental assistance is more male (39.7 percent vs approximately 20 percent in New Haven vs 25 percent nationally) and less likely to have children in the household (17.8 percent vs 37 percent in New Haven vs 60 percent nationally) (Center on Budget and Policy Priorities 2019). Due to JustHouHS's purposeful sampling of recently incarcerated individuals, people with a history of recent incarceration and felony convictions are likely overrepresented compared to the general population of households receiving or on the waitlist for rental assistance in New Haven and the United States as a whole. Thus, this sample may represent particularly disadvantaged individuals. Though the findings described above may not be generalizable to all individuals receiving or on the waitlist for rental assistance, they do indicate that rental assistance impacted the wellbeing of study participants, despite the many challenges that they face.

Additionally, the sample size in combination with the heterogeneity of types of rental assistance received precluded us from examining the difference between types of rental assistance. While little research has specifically explored housing outcomes in relation to the

rental assistance type, prior research suggests that different forms of rental assistance may have varied benefits. For example, some previous studies found that project-based housing, but not voucher-based rental assistance, may be associated with health benefits and housing stability (Wood, Turnham, and Mills 2008; Fenelon et al. 2017). However, other studies suggest that vouchers may modestly improve housing stability (Mills et al. 2006). Further research is needed in this area as understanding possible disparities across types of rental assistance is vital for informing future housing policy, especially as current policy moves away from project-based housing towards vouchers and tenant-based assistance (Keene and Geronimus 2011).

Finally, misclassification of the rental assistance measure is possible, as with any self-reported variable. We did attempt to mitigate misclassification by using detailed and locally relevant questions about each form of rental assistance available to residents of New Haven. Correspondingly, not all participants receiving voucher-based assistance may actually live in rent-assisted housing as voucher holders can face significant challenges in finding eligible units and landlords who are willing to take vouchers (Ellen 2018). However, this type of misclassification would likely diminish any observed effects, indicating that the findings of this study are conservative. We were also unable to ascertain whether participants on the waitlist had access to other forms of affordable housing (e.g. via tax credits that create affordable units or via family members), which would reduce group differences. Our findings suggest that despite the possible availability of other forms of affordable housing, rental assistance was still associated with improved housing stability, quality, autonomy, and affordability.

Conclusion

In a sample of low-income individuals, we find that those receiving rental assistance significantly benefitted from this resource. They had lower odds of reporting housing instability, low quality housing, lack of autonomy related to housing, and some measures of housing unaffordability compared to those on waiting lists and those who were neither receiving housing nor on waiting lists.

This study contributes to a growing literature on the benefits of rental assistance. Though additional research is still necessary, evidence from this study indicates that the expansion of rental assistance could benefit many low-income Americans, perhaps reducing poor health outcomes, health inequities, and even healthcare spending.

Acknowledgements

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Table 1.

Descriptive Statistics

	Receiving Assistance	Waitlisted (and unassisted)	Neither waitlisted or assisted	Total %	P
N	81	100	219	400	
Demographics					
Mean age (years)	49.5	45.7	42.7	44.8	<0.001
% Male	40.7	61	80.8	67.8	<0.001
Race					
% NH Black	64.2	61	52.1	56.8	0.1041
% NH White	13.6	15	27.9	21.8	0.005
% Other	9.9	18	14.6	14.5	0.305
Ethnicity					
%Latino/ Hispanic	17.3	16	15.1	15.8	0.894
Potential barriers and facilitators to rental assistance					
% Employed	42	53	50.2	49.3	0.309
% Ever Received Disability	40.7	29	13.7	23	<0.001
% With children in home	18.5	14	10.5	13	0.177
% Ever Felony	44.4	63	70.8	63.5	<0.001
% Recent Incarceration	18.5	56	63.5	52.5	<0.001

g Stability

Table 2

	Odds of feeling unstably housed (N = 1337)						Odds of Worrying about Eviction Always or Often (N = 851)						Odds of Viewing Your Current Residence as Only Temporary (N = 1337)					
	Model 1		Model 2		Model 3		Model 1		Model 2		Model 3		Model 1		Model 2		Model 3	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
...ce	4.68***	(...7-6.87)	4.32***	(2.91-6.40)	4.19***	(2.81-6.24)	4.15***	(2.58-6.65)	4.27***	(2.56-7.11)	4.17***	(2.44-7.12)	4.50***	(3.06-6.63)	4.14***	(2.80-6.13)	4.18***	(2.81-6.22)
ist	2.92***	(...9-4.07)	2.36***	(1.66-3.37)	2.24***	(1.57-3.19)	2.49***	(1.58-3.92)	2.30**	(1.38-3.85)	2.15**	(1.25-3.67)	4.01***	(2.91-5.32)	3.28***	(2.32-4.63)	3.08***	(2.17-4.38)
...ted	ref		ref		ref		ref		ref		ref		ref		ref		ref	
...ime	0.87**	(...9-0.95)	0.87**	(0.79-0.96)	0.920	(0.83-1.03)	0.90	(0.79-1.02)	0.91	(0.80-1.04)	0.99	(0.84-1.16)	0.91	(0.83-1.00)	0.92	(0.83-1.02)	0.960	(0.85-1.09)
...aphics (Demographics)																		
			1.91***	(1.39-2.64)	1.58**	(1.14-2.20)			0.90	(0.58-1.41)	0.81	(0.50-1.30)			1.82***	(1.32-2.31)	1.35*	(2.71-2.18)
...le			ref		ref				ref		ref				ref		ref	
...ars)			0.99	(0.98-1.00)	0.99	(0.97-1.00)			0.98	(0.97-1.00)	0.98	(0.97-1.00)			0.92**	(0.97-0.99)	0.98**	(0.96-0.99)
Black			0.75	(0.52-1.09)	0.81	(0.56-1.16)			0.55*	(0.32-0.94)	0.56*	(0.33-0.96)			0.86	(0.60-1.25)	0.96	(0.66-1.39)
...nic			0.69	(0.42-1.13)	0.73	(0.45-1.20)			1.12	(0.58-2.15)	1.20	(0.62-2.33)			0.79	(0.49-1.29)	0.84	(0.51-1.36)
-			1.25	(0.60-2.62)	1.28	(0.61-2.69)			0.95	(0.37-2.45)	0.95	(0.37-2.43)			1.61	(0.78-3.35)	1.61	(0.77-3.36)
...White			ref		ref				ref		ref				ref		ref	
...l and / ...ors to																		
...ment					0.95	(0.723-1.24)					0.93	(0.64-1.37)					0.84	(0.64-1.10)
...bility					0.88	(0.62-1.25)					0.52*	(0.30-0.88)					0.67*	(0.46-0.98)
...ren / ...g					0.53**	(0.35-0.81)					0.93	(0.54-1.62)					0.56*	(0.36-0.88)
...y					1.09	(0.75-1.56)					1.52	(0.83-2.81)					0.93	(0.62-1.39)
...nt / ...ation					1.40	(0.99-1.99)					1.12	(0.59-2.13)					1.75**	(1.18-2.60)

	Odds of feeling unstably housed (N = 1337)						Odds of Worrying about Eviction Always or Often (N = 851)						Odds of Viewing Your Current Residence as Only Temporary (N = 1337)					
	Model 1		Model 2		Model 3		Model 1		Model 2		Model 3		Model 1		Model 2		Model 3	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
Use days					1.50[**]	(1.13-1.99)					1.62[*]	(1.10-2.40)					1.07	(0.78-1.45)

1

Table 3

Quality

| | Odds of Feeling Unsatisfied with Current Housing (N = 1337) | | | | | | Odds of Reporting Conditions of Place You Stay as Poor (N = 897) | | | | | |
| | Model 1 | | Model 2 | | Model 3 | | Model 1 | | Model 2 | | Model 3 | |
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
Rental Assistance												
Waitlist	4.30***	(2.94-6.27)	4.13***	(2.81-6.05)	4.04***	(2.75-5.95)	2.55**	(1.34-4.84)	2.49**	(1.31-4.71)	2.41**	(1.27-4.55)
Neither	2.94***	(2.12-4.09)	2.70***	(1.91-3.81)	2.60***	(1.83-3.71)	2.588***	(1.50-4.48)	2.30**	(1.35-3.92)	2.11**	(1.98-3.71)
Assisted	ref		ref		ref		ref		ref		ref	
Wave / time	0.83***	(0.76-0.91)	0.83***	(0.76-0.91)	0.88*	(0.79-0.99)	1.12	(0.90-1.41)	1.15	(0.92-1.45)	1.17	(0.92-1.49)
Demographics												
Male			1.04	(0.76-1.41)	0.90*	(0.66-1.24)			0.85	(0.53-1.36)	0.77	(0.473-1.245)
Female			ref		ref				ref		ref	
Age (years)			0.98*	(0.97-1.00)	0.98**	(0.97-0.99)			0.97***	(0.95-0.99)	0.97**	(0.95-0.99)
Race/ Ethnicity												
NH Black			1.00	(0.70-1.44)	1.03	(0.72-1.48)			0.95	(0.53-1.71)	1.01	(0.58-1.78)
Hispanic			0.69	(0.43-1.10)	0.72	(0.45-1.14)			1.09	(0.51-2.35)	1.18	(0.56-2.47)
Other			1.03	(0.52-2.07)	1.04	(0.50-2.11)			0.95	(0.34-2.70)	1.09	(0.39-3.04)
NH White			ref		ref				ref		ref	
Potential barriers and facilitators to rental assistance												
Employment					0.95	(0.74-1.22)					1.10	(0.70-1.73)
Disability					0.98	(0.67-1.41)					0.55	(0.23-1.30)
Children under 18					0.65*	(0.43-0.97)					0.89	(0.48-1.63)
Felony					1.23	(0.86-1.76)					0.67	(0.15-3.06)
Recent incarceration					1.12	(0.79-1.58)					2.18	(1.00-4.76)
Drug Use past 30 days					1.23	(0.92-1.63)					1.65*	(1.01-2.70)

*
<0.05

**
<0.01

***
<0.001

Autonomy

Table 4

	Odds of Wishing to Move but Feeling Unable to (N = 1337)						Odds of Reporting Rarely or Never Being Able to Sleep When You Want (N = 937)					
	Model 1		Model 2		Model 3		Model 1		Model 2		Model 3	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
Rental Assistance												
Waitlist	3.00 ***	(2.03-4.42)	2.98 ***	(2.01-4.42)	2.96 ***	(1.99-4.41)	2.68 ***	(1.52-4.72)	2.56 **	(1.45-4.52)	2.74 ***	(1.55-4.85)
Neither	2.35 ***	(1.70-3.25)	2.36 ***	(1.67-3.35)	2.38 ***	(1.66-3.43)	2.10 **	(1.24-3.56)	1.97 *	(1.17-3.31)	1.97 *	(1.15-3.35)
Assisted	ref		ref		ref		ref		ref		ref	
Wave / time	0.97	(0.88-1.06)	0.97	(0.89-1.07)	1.01	(0.90-1.12)	1.13	(0.92-1.38)	1.13	(0.92-1.38)	1.13	(0.92-1.39)
Demographics												
Male			0.89	(0.65-1.23)	0.83	(0.59-1.16)			1.13	(0.75-1.72)	1.03	(0.67-1.58)
Female			ref		ref				ref		ref	
Age (years)			0.98 *	(0.97-1.00)	0.98 *	(0.97-1.00)			0.99	(0.97-1.01)	0.99	(0.97-1.00)
Race/ Ethnicity												
NH Black			1.40	(0.98-2.01)	1.44 *	(1.01-2.06)			1.16	(0.68-1.98)	1.18	(0.69-2.02)
Hispanic			1.09	(0.69-1.72)	1.14	(0.72-1.79)			1.07	(0.53-2.19)	1.08	(0.53-2.20)
Other			1.12	(0.57-2.23)	1.14	(0.57-2.29)			1.41	(0.62-3.21)	1.42	(0.61-3.30)
NH White			ref		ref				ref		ref	
Potential barriers and facilitators to rental assistance												
Employment					0.97	(0.75-1.26)					0.88	(0.60-1.28)
Disability					0.96	(0.67-1.37)					1.28	(0.76-2.16)
Children under 18					0.77	(0.53-1.12)					0.68	(0.37-1.25)
Felony					1.25	(0.84-1.84)					0.38	(0.08-1.92)
Recent incarceration					0.90	(0.62-1.30)					1.74	(0.91-3.33)
Drug Use past 30 days					1.28	(0.98-1.68)					0.68	(0.37-1.25)

*
<0.05

**
<0.01

***
<0.001

Table 5

Affordability

| | Odds of Worrying about Paying Rent/Mortgage Always or Often (N = 851) | | | | | | Odds of Having any Utility Shut off in the Last Month (N = 1337) | | | | | |
| | Model 1 | | Model 2 | | Model 3 | | Model 1 | | Model 2 | | Model 3 | |
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
Rental Assistance												
Waitlist	2.83***	(1.71-4.70)	2.90***	(1.71-4.93)	2.86***	(1.66-4.93)	0.86	(0.52-1.41)	0.85	(0.51-1.44)	0.84	(0.49-1.44)
Neither	2.02***	(1.34-3.04)	2.05**	(1.32-3.18)	1.98**	(1.25-3.13)	0.96	(0.62-1.50)	1.01	(0.62-1.65)	0.99	(0.60-1.61)
Assisted	ref		ref		ref		ref		ref		ref	
Wave / time	0.90	(0.80-1.01)	0.90	(0.799-1.016)	0.96	(0.84-1.12)	0.86*	(0.76-0.98)	0.87*	(0.76-0.99)	0.83*	(0.70-0.97)
Demographics												
Male			0.81	(0.54-1.22)	0.77	(0.51-1.17)			0.68	(0.45-1.03)	0.68	(0.43-1.06)
Female			ref		ref				ref		ref	
Age (years)			0.99	(0.98-1.01)	0.99	(0.98-1.01)			0.98**	(0.96-0.99)	0.98	(0.96-1.00)
Race/ Ethnicity												
NH Black			0.85	(0.52-1.38)	0.84	(0.52-1.37)			2.08**	(1.22-3.55)	2.07**	(1.19-3.58)
Hispanic			1.16	(0.62-2.18)	1.17	(0.62-2.21)			1.64	(0.80-3.39)	1.74	(0.84-3.59)
Other			1.12	(0.98-1.01)	1.13	(0.50-2.53)			2.33	(0.94-5.77)	2.25	(0.92-5.52)
NH White			ref		ref				ref		ref	
Potential barriers and facilitators to rental assistance												
Employment					0.99	(0.70-1.41)					1.65**	(1.16-2.35)
Disability					0.86	(0.56-1.32)					0.68	(0.38-1.22)
Children under 18					1.15	(0.71-1.86)					1.09	(0.64-1.85)
Felony					1.46	(0.88-2.43)					0.97	(0.54-1.77)
Recent incarceration					1.07	(0.61-1.88)					0.87	(0.49-1.58)
Drug Use past 30 days					1.29	(0.91-1.84)					1.31	(0.86-1.99)

*
<0.05

**
<0.01

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<0.001