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Julie Cai

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Housing Assistance, Poverty, and Material Hardships

Julie Cai

Center for Economic and Policy Research (CEPR), Washington, DC, USA

ABSTRACT

This article documents the antipoverty effects of housing assistance programs and their relationships with other life circumstances. Using a novel sample of urban households, we examine how participation trajectories in housing programs (including Section 8/public housing and rent regulation) affect households' housing deprivation, income poverty, and other forms of material hardships. Employing a propensity score matching technique, we find evidence that individuals who remain in subsidized units are significantly less likely to experience rent burden, become homeless, or live in overcrowded environments. They also face lower odds of poverty than their eligible non-/past-assisted counterparts. However, we find that living in subsidized housing has almost no impact on material hardship. Also, we find no relationship between living in rent-stabilized housing and low-income households' material or housing hardship.


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Housing assistance; rent burden; housing insecurity; poverty; material hardship

An increasing number of households are experiencing housing deprivation. As a result, some may fall into poverty and have a higher risk of becoming homeless (Desmond & Kimbro, 2015; Kimberlin et al., 2018). In "Heavy Is the House," Desmond (2018) surveyed recent studies on renting households and profiled the overall impact of rent burden on contemporary Americans' lives, especially among vulnerable populations. Nationwide, about 14% of renters lived in poverty,¹ a substantially larger proportion than that of homeowners with or without mortgages in 2021 (Creamer et al., 2022). Housing costs may greatly (if not entirely) drive the higher poverty rate observed among renters because the affordable housing system has not kept pace with soaring rents. In 2019, approximately 21.1% of renters spent more than 50% of their income on housing costs, a decrease from 22.4% in 2018 (Cai & Fremstad, 2020). Although this is a promising downward trend prior to the pandemic, not surprisingly, renters with low incomes still struggled with severe rent burden. In 2019, approximately 70% of households in the first quintile of income distribution spent more than half their monthly income on rent and utilities. One in four households in the second quintile were severely housing cost burdened. By contrast, hardly any households in the 4th income quintile faced this issue in 2019. In response to the housing challenges, government subsidized housing policies² that directly target low-income renters generally take the form of either project-based public housing or housing vouchers. Further, rent control provision³ has been introduced in several large metropolitan areas to prevent disadvantaged tenants from displacement due to continuously rising rent, but the enforcement of such regulation is scarce, and its impacts are mixed.

CONTACT Julie Cai  cai@cepr.net

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The available funds for subsidized housing can serve only a small proportion of people who are eligible for the program because housing assistance for the disadvantaged, unlike food stamps, is not a federal entitlement. Due to budget limitations, the long wait for available units, and the vanishing number of rent-stabilized places, many households need to move to appropriate apartments but cannot do so (Fischer, 2019; Joint Center for Housing Studies of Harvard University, 2019; Watson et al., 2017). Nationwide, only about 25% of low-income households eligible for housing assistance receive some form of housing subsidy (Acosta & Gartland, 2021). Therefore, economic trade-offs often become part of low-income households' everyday decision-making. For instance, budget-tight Americans may reduce how much money they spend on their basic needs to pay rising rent costs. Food, clothes, and other basic expenses are often more elastic than housing costs are (Lipman, 2005). The housing crisis might have been amplified during the COVID-19 pandemic, with major metropolitan areas seeing relatively alarming high risks in both food hardship and housing insecurity (Cai et al., 2021).

Although researchers have examined housing assistance's effects on health- and neighborhood-related outcomes, children's development, and eviction (Fauth et al., 2004; Fenelon et al., 2018; Jacob et al., 2015; Lundberg et al., 2021; Newman & Holupka, 2017), the knowledge of its actual impacts on beneficiaries' economic lives is limited. Much research has been conducted to evaluate the costs and benefits of housing programs, or to examine the indirect effects of housing subsidies on employment opportunities, healthcare utilization, and marriage, and these studies show limited effects (Corcoran & Heflin, 2003; Fertig & Reingold, 2007; Van Ryzin et al., 2003; Wood et al., 2008). Research on housing-related hardship, poverty, and other material hardship among housing recipients is still far less developed. Only in recent years have studies on housing programs and their cost-related outcomes emerged (Gold, 2018; Kim et al., 2017). The direct rationale behind current housing assistance programs is to offer decent, safe, and affordable places in which the vulnerable population can live. Only if this goal is achieved may the other indirect positive impacts of housing policies appear.

To fill the gap, we leverage novel data collected from housing assistance receipts and rent control status to study both interventions. Specifically, we first assess the effects of current participation in programs (including public housing and housing vouchers) on housing-related deprivation of low-income households. We then look at the association between program participation and the beneficiaries' poverty status as well as other consumption-based outcomes at a 1-year follow-up. Separately, we replicate these analyses to assess outcomes for those in rent-stabilized housing. We attempt to provide evidence of each program's effectiveness. This study complements the growing literature on housing and economic well-being by employing the supplemental poverty measure (SPM) to capture poverty outcomes, a measure that holistically takes into account other government assistance programs and tax systems, as well as other necessary expenses for households. This could better measure how households are doing with their disposable income. In addition, besides monetary poverty, we incorporate detailed aspects of material-based deprivation as we assess the antipoverty impacts of housing programs. Material hardship is another key indicator of a household's economic well-being (Mayer & Jencks, 1989) because it captures the multidomain circumstances necessary to meet daily needs, such as paying for food, utility bills, medical costs, and other expenses.

Previous Research

Housing Assistance and Housing-Related Hardship

To date, studies on the impact of low-income housing programs seem not to have reached a consensus, and to our knowledge, most research on housing-specific outcomes only examines one particular aspect related to housing problems. Although some earlier studies produced mixed results on the effectiveness of housing subsidies for relieving beneficiaries' rent burdens

(Berger et al., 2008; McClure, 2005; Varady, 2010; Williamson, 2011), promising conclusions on the positive outcomes housing assistance can have for people, particularly more disadvantaged individuals and families, began to emerge. For example, project-based housing assistance programs were found to reduce the rent burdens of low-income families with children (Gold, 2018). Project-based public housing has also been found to protect families with children from eviction (Lundberg et al., 2021).

Homelessness is treated as being at the extreme of housing circumstances. Compared with outcomes regarding cost burden, the impacts of programs on reducing housing instability yielded more consistent results in previous studies (Fischer, 2014; Gold, 2018; Wood et al., 2008), although instability is often conceptualized as the likelihood of moving, not focused on self-reported homelessness. We find only one study looking at housing assistance and subsequent housing insecurity, among renters in the Detroit area, specifically including survey questions regarding homelessness or moving in with someone to share expenses (Kim et al., 2017). However, in this study, the researchers constructed an aggregated housing insecurity index including multiple indicators—moved for cost reasons, completed foreclosure, experienced eviction or homelessness, moved in with someone to share expenses, or were behind on rent (Kim et al., 2017). Even though they found that housing-assisted renters have lower housing insecurity, the aggregated index made it difficult to reach the conclusion that having housing assistance could reduce homelessness per se.

Furthermore, moving beyond homelessness, housing research rarely focuses on the association between housing assistance programs and living conditions. Because living in a less crowded environment has been shown to have significant benefits for people's health and other aspects of their well-being (Evans, 2021; Park & Evans, 2019), overcrowding should become a priority for housing assistance evaluations. Individuals with limited income and resources may have to move in with their parents or friends to offset housing costs, which may be consequential for these households' well-being.

In addition to affordability and stability, the present study uses residential crowding as one of the indicators of housing hardships to improve the understanding of low-income recipients' living situations. As rent burden, space, and stability are aspects of housing programs that need to be addressed, the beneficiaries of programs may be less likely to be displaced if participation in such programs can lower housing-related costs. We expect the following:

Hypothesis #1: Both subsidized housing and rent-stabilized housing will have positive impacts on recipients' housing-related outcomes, including cost, crowding, and displacement.

Housing Assistance and Income Poverty

Housing assistance could be a critical policy intervention in the fight against poverty. The data suggest that with no housing assistance, the poverty rate would have been 16.2%, rather than 15.3%; in other words, 2.8 million more people would have been classified as poor, with all else remaining constant (Short, 2015). Using data from the American Community Survey in 2013, Warren (2016) found that the federal renter's tax credit program plays a significant role in bringing people out of poverty. Not surprisingly, poverty is more prevalent among renters than among homeowners. Nationally, more than one quarter of renters are SPM poor whereas one tenth of homeowners are (Kimberlin et al., 2018). Over time, despite the elevated poverty rate for renters as opposed to homeowners, renters have made greater progress in reducing poverty than their counterparts who own homes with mortgages. Nationally, 23.4% of renters experienced poverty in 2017, which is 3.5 percentage points lower than in 2013. In contrast, poverty reduction among homeowners tended to be modest, with the poverty rate decreasing by 0.7 percentage points in a 4-year period.

The comparatively high poverty rate among renters motivates the current study to determine housing programs' effectiveness in reducing income poverty. The Personal Responsibility and Work Opportunity Reconciliation Act of 1996 (the welfare reform) limited dependency on federal assistance, particularly cash assistance for vulnerable populations, and shifted more responsibility for social-program administration to states and localities (Curtis et al., 2013; McCarty & Siskin, 2012). Specifically, U.S. safety nets have been shifting from cash-based programs, such as TANF, to more in-kind-like benefits, such as the Supplemental Nutrition Assistance Program (SNAP), Medicaid, and energy and housing assistance (Hardy, 2017; Moffitt, 2013). It is critical to investigate ways that housing subsidies lift low-income families out of poverty. Some studies indicate that programs similar to SNAP and Earned Income Tax Credit dramatically reduce household poverty and the burden of housing costs (Meyer, 2010; Renwick & Fox, 2016; Stegman, Davis, & Quercia, 2004); some have documented Medicaid's antipoverty effects (Zewde & Wimer, 2019). However, studies investigating housing assistance's antipoverty effects are surprisingly scarce. With renters facing high housing costs, governmental housing programs that directly serve renters consistently have long wait lists. This hidden yet vital antipoverty aspect of housing assistance programs is worth examining.

In thinking of the multiple domains of a household's economic life, recent empirical research also indicates that the high cost of living forces low-income Americans to tighten their food budgets (Basu et al., 2016). Theoretically, if living in subsidized or rent-stabilized housing, families may have more resources to pay for other necessities or bills; therefore, a reduced material hardship pattern might appear. In fact, using cross-sectional data from the National Health Interview Survey linked with administrative data from the U.S. Department of Housing and Urban Development (2007), Simon et al. (2017) found a lower percentage of people reporting unmet medical care needs among current housing-subsidy recipients relative to future recipients (those who would receive subsidies within 24 months after the interview). That being said, Pilkauskas et al. (2012) suggested that housing assistance programs tend to be less responsive to the material deprivations of households compared with SNAP and other entitlement programs. Even though conclusive evidence about whether low-income housing programs are associated with a reduction in material hardships has not been reached (Shroder, 2002), an exploration of this association is worthy of attention, as the potential outcomes would lead to better housing policy goals focused on achieving the economic well-being of households. Taken together, if this study's evidence reveals that housing assistance effectively reduces housing payments for program participants, more disposable income could be saved. Thus, recipients may be less likely to live below the poverty line. Further, if housing assistance could mitigate poverty status, recipients would have more resources to pay necessary expenses, which would reduce the risk of material hardship, such as difficulties paying for food, medical care costs, or utility bills. We expect the following:

Hypothesis #2: Both subsidized housing and rent-stabilized housing will reduce the likelihood of beneficiaries living below the poverty line.

Hypothesis #3: Both subsidized housing and rent-stabilized housing will mitigate material hardship.

Overall, three major trends emerged from the previous research. First, housing assistance effectively eases the pressure of housing expenses for participants. Second, the results in terms of the effects on overcrowding and multiple nonmonetary domains of material hardship are mixed. Third, very little research has been conducted to investigate the antipoverty effects of current housing programs; in particular, very few studies have adopted the improved poverty definition—the SPM—that considers more comprehensive concepts of economic resources and family composition. Moreover, one piece of the puzzle remains: in most of these studies, the researchers did not consider the circumstances that determine who gets into the program and

who does not. In other words, more resourceful families might be able to apply for assistance as opposed to those with limited information. Moreover, although some positive impacts on housing costs are apparent, omitted variable bias might emerge if the rent-control piece is not taken into account. In this study, those who experience rent burdens, residential crowding, and homelessness are broadly defined, in Rossi's (1991) words, as "precariously housed." Our research goal is to assess whether housing programs could improve housing stability and other aspects of economic well-being.

This paper contributes to the research area in two ways. First, to date, empirical research investigating housing, poverty, and economic hardships is underdeveloped. We incorporate an improved and more accurate measure of U.S. poverty and examine the relationship among housing program participation, housing-related deprivations, multiple hardships, and income poverty. Second, given the prior conclusion regarding the limited impact that housing programs have on material hardship, we integrate a generally hidden area of housing studies—rent regulation—in the hopes of unpacking the antipoverty effects of subsidies and rent stabilization, as well as their consequences when it comes to hardships.

Data and Method

Our novel data are drawn from the New York City Longitudinal Survey of Wellbeing (NYC-LSW), which represents a holistic picture of the current economic well-being of New Yorkers at all income levels. It explores severe material hardships (including healthcare, food, housing, and community services), income, and family health and well-being in order to trace the dynamics of disadvantaged populations in New York City (Neckerman et al., 2016). The NYC-LSW oversamples low-income households and is well suited to investigate housing assistance questions. We use the baseline and 1-year follow-up of the pooled data from the first two cohorts of the NYC-LSW, which results in a sample of 6,190 households. The first cohort was recruited and interviewed between December 2012 and March 2013; the second cohort was recruited and interviewed between April and December 2015. The sampling method yielded a probability sample of respondents which, when weighted, is representative of New York City adults. The main sample of the first cohort was sampled using random digit dial with an oversample of participants from high-poverty zip codes (>20% of residents living in poverty). The main sample of the second cohort was sampled as part of New York City's Community Health Survey using stratified random sampling to ensure the sample was representative of all New York City neighborhoods. Furthermore, both cohorts included subsamples of participants randomly recruited (using a systematic sampling approach) from social service agencies. The purpose of including the agency subsample was to capture information on particularly disadvantaged individuals, such as the homeless, who are often missed in telephone surveys. The data are weighted to be representative of New York City adults using data from the American Community Survey. Documentation of weighting procedures, including adjustments for oversampling, random over/underrepresentation, nonresponse, and attrition can be found in appendix B of the NYC-LSW codebooks (Center on Poverty and Social Policy, 2020).

We aim to explore how program participation influences later outcomes of interest (1-year follow-up); thus, we use data from households that participated in both baseline and 1-year follow-up surveys. The analysis sample is further restricted to those in renter households or those temporarily living with others with an income of less than 250% of the poverty threshold, which results in a sample of 1,767 households. This measure of income relative to poverty threshold is an annual average in the year prior to the baseline survey. We then further exclude 376 observations due to missing data; the final analytic sample is 1,391 households. Contract rent is computed on an annual basis. In this study, Hispanic was coded in one category regardless of race. The race, ethnic and educational variables refer to the householders.

Key Variables

Reception of Housing Assistance

Each year, the same households reported whether or not they lived in public housing or received Section 8 vouchers. Households that are subsidized through public housing or housing vouchers are considered to receive governmental housing assistance. Because we are interested in how program participation patterns affect low-income households' rent burden, poverty status, and multiple domains of life circumstances, we categorize low-income households into three groups: (a) never received housing assistance (eligible nonparticipants), (b) received housing assistance at both baseline and 1-year follow-up or only at 12 month follow-up (current participants), and (c) received housing assistance at baseline but not at the follow-up interview (past-participants/program leavers).

Rent-Stabilized Tenants

Similar to the housing assistance question, all respondents were asked if they currently lived under rent-controlled units. We also group all those participating in baseline and 1-year follow-up interviews into three categories: (a) never lived under rent control (not rent-control tenants), (b) lived in rent-controlled housing all through (current rent-control tenants), and (c) lost rent-controlled units at the time of the 1-year survey (past rent-control tenants).

Rent Burden

Rent burden at the 1-year follow-up is measured using a ratio of rent to income. Beginning in 1981, the U.S. Department of Housing and Urban Development (HUD) has used a standard of 30% of a household's total budget for housing to define rent burden (Fronczek & Savage, 1991; Jewkes & Delgado, 2010). Consistent with HUD, in this study, rent burden is defined as spending more than 30% of annual income on rent.

Residential Crowding

Following methods set forth by HUD (2007), overcrowding is defined as more than two persons per bedroom. Also, a studio apartment was counted as a bedroom or a room in the measurement (Goodyear et al., 2011). Studio apartments occupied by more than two persons are classified as crowded.

Housing Insecurity

A person's homelessness status is measured through several indicators reported at the time of survey: lived on the streets, in abandoned buildings, or an automobile; lived in temporary housing or group shelters; or was temporarily doubling up with families or friends. Those who fall into any one of these categories at the 1-year follow-up survey are coded toward a value of 1, whereas others who are housing secure are coded toward 0.

Income Poverty

The SPM is used to determine the level of income poverty. Unlike the official poverty measure, the SPM accounts for posttax, posttransfer income, as well as nondiscretionary expenses, such as out-of-pocket medical expenses, work-related expenses, and childcare costs. This amount is compared to a threshold that is based on consumer expenditures on a core set of necessary goods and that varies geographically with the cost of housing and according to housing status (see Fox [2019] for more details on the construction of the SPM). Being poor at the 1-year follow-up is defined as a household having a ratio of income to poverty threshold of less than 1.

Material Hardships

A total of material hardship scores (ranging from 0 to 5) at the 1-year follow-up is a continuous variable with a sum of household material hardships (including food insecurity, precarious housing, inability to pay bills, lack of medical help, and financial insecurity). Food hardship is defined as often running out of food before there is money to get more or worrying that food would run out before there is money to get more. Housing hardship is defined as moving in with others or having to stay in a shelter. Utility hardship is defined as having utilities cut off due to lacking money to pay bills. Medical hardship is defined as being unable to see doctors when necessary due to lack of money. A lack of short-term financial capacity is defined as often living paycheck to paycheck or running out of money before the end of the month. In addition to the summary hardship index, we also consider these five aspects of hardship. Five dichotomous variables are constructed to reflect each domain of hardship at the 1-year follow-up.

Controls

We include a set of pretreatment covariates. We select these variables based on the theoretical understanding of the program participation and process generating the outcomes. All these variables are reported during the baseline interview. We include a variable denoting gross income relative to poverty threshold in the year preceding the baseline interview, when the treatment was defined. We also incorporate the respondent's age information and a disability variable, which captured whether there was any disability or health condition limiting a respondent's ability to work, because low-income disabled people or the elderly may be prioritized to receive housing benefits. We also include whether the respondents were married or partnered, their race/ethnicity, and their level of education.

Analytic Strategy

To rule out the possibility that differences in experiences of receiving housing subsidies are due to differences in observable factors affecting selection for housing-program status, we applied a propensity-score-matching (PSM) approach to reduce the selection bias in estimating the effects. Four separate PSM analyses were performed. We tested two housing interventions (housing assistance and rent stabilization); for each intervention, we used two treatment statuses (former participation and current participation). We acknowledge that characteristics considered in the PSM analysis are only observables and are not exhaustive and that there might be unobservables that are associated with treatment status. Although this is an inherent limitation of the PSM approach and conventional statistical analyses, it enabled us to gain a closer estimation of housing assistance's antipoverty effects compared to results without matching (Rosenbaum, 2010; Rosenbaum & Rubin, 1983).

Specifically, we first employed a PSM estimator: program participation is the treatment whereas eligible nonparticipants constitute the control group. The aforementioned covariates are used to predict the probability of participating in housing programs for each household by regressing the housing receipt in a logistic model, which is equivalent to the propensity score. We use Equation (1) to predict the probability of being exposed in housing programs. X_{it0} represents a vector of sociodemographic covariates that could affect the propensity to receive housing (including respondent's race/ethnicity, gender, education, and age; whether respondents have health problems or disabilities that prevent them from working; whether a spouse/partner is present in household; and income-to-needs ratio).

$$\ln\left(\frac{P}{1-P}\right) = \beta + \delta X_{it0} \quad (1)$$

Then, we used the propensity score to match the observations of the treatment group to those of the nonparticipant group by applying nearest-neighbor-matching with the replacement method, which allows the nontreated subject (nonparticipant) who has been matched to a treated subject to be returned to the nontreatment pool for further matching. It is worth noting that compared to matching without replacement, matching with replacement tends to reduce bias to achieve better matching, although it may increase standard errors. In the [Supplementary Appendix](#), we show the kernel plots of the propensity score before and after matching. After assessing the balance, we present the mean differences in a series of sociodemographic factors between the treatment and control groups (eligible nonparticipants) before and after matching (Dehejia & Wahba, 2002). Finally, based on each matched sample, we regress each outcome on housing program participation statuses and a set of covariates as presented in [Equation \(2\)](#):

$$Y_{it1m} = \alpha + \beta_1 T_{im} + \beta X_{it0m} + \varepsilon_{it1} \quad (2)$$

where Y_{it1} is the outcome of interest at the 1-year follow-up (time 1) for individual i between treated participants and matched nonparticipants. For the first round of analyses, we treated T_{im} as a binary variable representing the current reception of subsidies for individual i in the matched sample, m . Similarly, in the second round, T_{im} was used to index past reception of subsidies in the matched sample. In the last two sets of analyses, T_{im} was substituted with current rent-control tenants and former rent-control tenants. We took a conservative approach to include the covariates in the models again. Households' baseline sociodemographic factors are denoted as X_{it0m} in the matched sample, m . In the sample of housing participants and matched never-participants, we used logistic-regression models to address each of our research questions and ordinary least squares (OLS) regression to estimate the participation statuses of material hardship scores.

Results

As [Table 1](#) demonstrates, we report all outcomes of interest, as well as the characteristics of people who might be eligible for housing assistance. To compare the various statuses with respect to program participation, we organized the table to present three groups: eligible nonparticipants, current participants, and former participants. In the analytic sample, 45% of sampled individuals were Hispanic, with non-Hispanic White individuals and non-Hispanic Black individuals comprising 13% and 34%, respectively. In addition, 24% of individuals did not have a high school diploma. Fifty-six percent of low-income New Yorkers in the sample experienced rent burden at the 1-year follow-up survey. Twelve percent of disadvantaged households lived in overcrowded conditions, and an average of 38% lived in poverty at the 12-month interview. Approximately 70% of the households either had lived in or currently lived in apartments deemed rent-stabilized units. Low-income households also experienced housing hardship (9%). As shown in the middle panel of [Table 1](#), approximately 23% of low-income New Yorkers received housing assistance and remained in programs at the time of the 1-year follow-up survey, whereas 10% of people receiving subsidies left the program, voluntarily or involuntarily.

The average proportion of people experiencing rent burdens and assorted forms of material hardship varies as a function of participation in housing assistance programs. On average, low-income households spend 47% of their annual income on rent. It is promising that members of the currently subsidized group spent a slightly smaller portion of their annual budgets (40%) compared to their eligible nonparticipant counterparts (50%), but neither group escaped the rent-burdened category. Forty-six percent of current participants spent over 30% of their income on housing costs. By comparison, 61% of eligible nonparticipants struggled to pay housing costs at the 1-year follow-up interview. In addition, among housing beneficiaries, a lower proportion of people lived below the poverty line—27%, compared to 42% of those who were eligible but did not receive assistance.

Table 1. Characteristics of low-income New Yorkers by housing assistance program participation at 1-year follow-up.

	All	Public housing/Section 8		
		Eligible nonparticipants	Current participants	Former participants
<i>N</i>	1,391	933 (67%)	320 (23%)	138 (10%)
Not rent-control tenants	0.30	0.38	0.12	0.12
Current rent-control tenants	0.57	0.49	0.77	0.69
Former rent-control tenants	0.13	0.13	0.11	0.20
Economic well-being at 1-year follow-up				
Rent-to-income ratio	0.47 (.35)	0.50 (.35)	0.40 (.34)	0.40 (.38)
Rent burden	0.56	0.61	0.46	0.47
Residential crowding	0.12	0.15	0.06	0.07
Housing insecurity	0.09	0.11	0.04	0.12
Income poverty	0.38	0.42	0.27	0.36
Hardship score	1.05 (1.14)	1.02 (1.13)	1.04 (1.13)	1.28 (1.18)
Food hardship	0.21	0.19	0.28	0.23
Inability to pay bill	0.21	0.21	0.18	0.29
Cannot afford to see doctors	0.25	0.27	0.20	0.28
Live paycheck to paycheck	0.28	0.25	0.34	0.36
Baseline characteristics				
Income-to-needs ratio	1.10 (.65)	1.20 (.68)	0.89 (.55)	0.91 (.58)
White	0.13	0.16	0.09	0.09
Black	0.34	0.33	0.36	0.39
Asian	0.04	0.05	0.01	0.01
Others	0.04	0.04	0.04	0.03
Hispanic	0.45	0.43	0.50	0.47
Less than high school	0.24	0.21	0.33	0.29
High school	0.30	0.30	0.28	0.33
Some postsecondary education	0.28	0.28	0.26	0.27
Higher education	0.18	0.21	0.12	0.11
Health problem or disability	0.38	0.29	0.57	0.50
Female	0.69	0.68	0.71	0.72
Age: 18–25	0.15	0.20	0.03	0.09
Age: 25–45	0.32	0.34	0.23	0.37
Age: 45–65	0.38	0.33	0.52	0.38
Age: >65	0.15	0.14	0.21	0.16
Spouse/partner present	0.23	0.26	0.15	0.21
Number of children	0.80 (1.10)	0.77 (1.13)	0.82 (.83)	0.94 (1.31)
Number of adults	1.93 (1.08)	2.08 (1.14)	1.61 (.50)	1.66 (.94)

Note. The proportion or mean (standard deviation) is presented. The income-to-needs ratio is measured as an annual average in the year prior to the baseline survey.

The average material hardship factor score for all surveyed households was 1.05; this did not fluctuate across program participation statuses. This particular result does not seem to support Hypothesis 3—that housing programs reduce material hardship among recipients. We assume that all housing-related deprivations among those who received assistance at the time of the survey decreased, as they were current beneficiaries. If this is the case, the income resources saved to pay rent should have been reallocated to meet other consumption needs such as food, healthcare, and clothing. However, we were surprised to observe a relatively higher proportion of people with some domains of material hardship among the subsidized group in the 1-year follow-up survey. There was a clear difference across the three groups. The subsidized group had a higher proportion of food-insecure people than the other two eligible groups. A similar pattern was observed in terms of running out of money between paychecks. Those who relied on the programs or who had left them were disproportionately likely to be Hispanic or Black.

In the next step, we used a PSM approach to reduce the potential bias in the estimation of robust effects of receiving housing assistance on rent burden, residential crowding, living in poverty, and housing insecurity. We conducted four matching analyses for the treatment statuses. The four figures in [Supplementary Appendix A](#) demonstrate the success of the matching process. In each figure, the left panel reports the density plot of the estimated propensity scores for the treated sample (blue solid line); the entire pool of the potential control sample is represented by

the red dashed line. The right panel reports the distribution of the treated group and the matched control sample. The two lines on the right panel overlap more closely than the lines on the left panel, suggesting that the distributions of the propensity scores between the groups are very similar. Alternatively, the four tables in [Supplementary Appendix B](#) report the mean differences between participants and nonparticipants in terms of a series of sociodemographic characteristics before and after applying the matching technique. For example, [Supplementary Table B1](#) shows that before the PSM was performed, eligible nonparticipants (column 1) differed significantly from current participants (column 2) in terms of income-to-needs ratio, age, race/ethnicity, marital status, and disability status. Specifically, those who reliably participated in the programs were substantially more likely to have lived with fewer resources the prior year before the baseline interview. They were also more likely to be older, be African American or Hispanic, experience health or disability problems, and be single compared to eligible nonparticipants. However, we observe many more similar covariates between the two groups after applying PSM, as shown in the last column in [Supplementary Table B1](#) that reports statistically nonsignificant characteristics. Thus, we analyze each treatment using the matched sample, which consisted of a more comparable control group for housing beneficiaries.

Logistic Regression and OLS Regression Models Based on the Matched Sample

In [Table 2](#), we report results from four sets of analyses on the key indicators of interest: current subsidy receipt, former subsidy receipt, current rent-control tenants, and former rent-control tenants. To test Hypotheses 1 and 2, in each set of analyses among the matched sample, we regressed the outcome of interest on the treatment indicator and a set of covariates. Although this is already based on the matched sample, we took a more conservative approach by including the covariates in the analyses and found that the results are very similar with and without such covariates. Panel A in [Table 2](#) appears to partially support Hypotheses 1 and 2, illustrating subsidized housing's positive impacts. Specifically, Panel A suggests that housing assistance substantially reduced the odds of experiencing rent burden. People currently receiving subsidies were 57% less likely to face a rent burden compared to eligible nonparticipants. Notably, compared to their eligible nonsubsidized counterparts, those living in subsidized housing were 61% less likely to live under the poverty line (Model 4). The odds of living in overcrowded environments and becoming homeless were also lower. For instance, housing assistance significantly reduces the chance of displacement. We estimate that current subsidy beneficiaries are 65% less likely than nonparticipants to experience housing insecurity when other variables remain

Table 2. Four regression-adjusted matched estimates for housing-related outcomes and income poverty, by treatment status.

	Model 1 Rent burden OR RSE	Model 2 Residential crowding OR RSE	Model 3 Housing insecurity OR RSE	Model 4 Income poverty OR RSE
Housing assistance program				
A: Current program participants	0.43 (0.09)***	0.46 (0.19)†	0.35 (0.15)*	0.39 (0.08)***
B: Former program participants	0.74 (.21)	0.38 (0.22)†	1.53 (0.67)	0.62 (0.19)
Rent stabilization program				
C: Current rent-control tenants	0.99 (0.29)	0.44 (0.19)	0.72 (0.33)	0.66 (0.20)
D: Former rent-control tenants	0.96 (0.28)	1.64 (0.57)	0.90 (0.34)	0.58 (0.16)*

Note. Sample is restricted to households with gross incomes in the year preceding the baseline interview that were less than 250% of the poverty threshold. The eligible nonparticipant is the reference group for the two analyses of the housing assistance program. The reference group for the two analyses of the rent stabilization program is the nonrent-control tenant. Sample sizes for panels A, B, C, and D are 540, 251, 875, and 310, respectively. Odds ratios (OR) with robust standard errors (RSE) in parentheses are presented. an OR value of less than 1 indicates lower odds to experience the outcome of interest, whereas an OR greater than 1 denotes higher likelihood that the outcome would occur, compared to the base group.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

constant (Model 3). However, Panel B only shows that residential crowding is less likely to occur for formerly subsidized people compared to those who are eligible for but not living in subsidized housing. Although directions for rent burden and poverty operate in the way we may expect, they are nonsignificant. Interestingly, turning to the rent stabilization program, we do not find any significant results for the current rent-control tenants. Thus, the current results on rent-stabilized housing do not have implications regarding validity for part of the first two hypotheses—that a rent-stabilized program will improve housing-related or poverty outcomes.

Although no substantial difference in material hardship scores is observed across program participation status in Table 1, and the hardship rate is even higher for those living in subsidized housing, these factors do not account for differences in demographic factors and other housing-related characteristics. To formally test Hypothesis 3, in the matched sample, we regress households' experience of material hardship on program participation and a set of covariates (Table 3). It is a bit surprising that none of the hardship outcome estimates appear significant, providing no support for Hypothesis 3. We will discuss this further in the next section. The nonsignificant results may be due to large standard errors, but some relationships between outcomes and treatment indicators still operate in the expected direction. For example, those currently living in subsidized housing have lower material hardship scores and are less likely to experience food insecurity or be deprived of medical care (Models 1, 2, and 4 in panel A).

As mentioned above, obtaining subsidies is generally associated with lower housing hardship among current housing beneficiaries (see Model 3 in panel A, Table 2). Thus, we expect that if housing hardship is counted in the material hardship variable, then overall hardship scores among subsidized households should be lower than if the housing hardship component is excluded. In addition to Model 1 shown in Table 3, in which the housing hardship component is counted, we also estimated economic hardship scores by running three additional models: (a) economic hardship scores not counting the housing component, (b) a dichotomous hardship variable with housing hardship, and (c) a dichotomous hardship variable without housing hardship. In results not included here (available from the author upon request), the same patterns were found among those individuals who relied on the program for the material hardship outcome in both sets of models. Program participants had lower economic hardship scores or were less likely to have economic difficulties when housing was counted as one of the components within the economic hardship variable. These results indicate that housing assistance helps

Table 3. Regression-adjusted matched estimates for material hardship, by treatment status.

	Model 1 Material hardship score β RSE	Model 2 Food insecurity OR RSE	Model 3 Inability to pay bills OR RSE	Model 4 Medical care hardship OR RSE	Model 5 Financial hardship OR RSE
Housing assistance program					
A: Current program participants	−0.01 (0.09)	0.77 (0.20)	1.24 (0.33)	0.74 (0.19)	1.24 (0.30)
B: Former program participants	0.12 (0.12)	1.26 (0.48)	1.07 (0.38)	0.88 (0.34)	3.21 (1.22)
Rent stabilization program					
C: Current rent-control tenants	0.02 (0.15)	1.04 (0.43)	0.94 (0.35)	0.88 (0.33)	1.01 (0.36)
D: Former rent-control tenants	0.16 (0.13)	1.24 (0.43)	0.85 (0.29)	1.49 (0.47)	1.17 (0.40)

Note. The sample is restricted to households with gross incomes in the year preceding the baseline interview that were less than 250% of the poverty threshold. The eligible nonparticipant is the reference group for the two analyses of the housing assistance program. The reference group for the two analyses of the rent stabilization program is the nonrent-control tenant. Sample sizes for panels A, B, C, and D are 540, 251, 875, and 310, respectively. Coefficients with robust standard errors (RSE) in parentheses are presented for ordinary least squares regression. Odds ratios (OR) with robust standard errors in parentheses are presented for logistic regressions.

$\dagger p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

low-income households reduce housing deprivations to some extent, but it does not have a substantial impact on eradicating other material hardships.

Discussion and Conclusion

Despite the ongoing housing affordability challenges and the elevated poverty rate for U.S. renters, research on housing programs' antipoverty impacts remains limited. One of the important steps toward sensible policy solutions is to assess programs' effects on direct outcomes, including housing-specific problems and other aspects of economic well-being. Given that the housing subsidies that directly target low-income renters have long wait lists, their capacity to address the needs of potentially eligible individuals is inadequate. Prior research investigating the relationships between housing assistance, healthcare utilization, and employment outcomes has produced mixed results. More consistent results on the effectiveness of housing assistance have only begun to emerge in recent years, and most studies have examined cost-related or eviction outcomes. Research on the role of housing programs in income poverty and economic deprivation for disadvantaged households is still less developed. Besides housing subsidy programs, rent control regulations might also ease low-income renters' economic stressors. Despite its effect on displacement reduction among tenants, prior studies on rent control programs in various localities tend to suggest these programs may discourage landlords from supplying rental housing and result in landlords increasing rent in the long run (Diamond et al., 2019). The ongoing mixed evidence surrounding the advantages and disadvantages of rent control regulations (Autor et al., 2017; Favilukis et al., 2019; Gardner, 2022) and the recent momentum of rent-regulation bills passed in areas such as Oregon, California, and New York City have created an opportunity to assess whether rent stabilization programs could be an effective policy lever to ease households' living circumstances.

We present the latest results from a unique data set examining various aspects of poverty and material hardship among contemporary low-income urban residents. In doing so, we address the following question: To what extent do housing programs, including (a) housing subsidies (either Section 8 or public housing) and (b) rent-control regulation, affect people's housing circumstances, income poverty, and other material hardships, which have been long-standing concerns of policymakers? Employing a PSM technique to reduce selection bias, we find that relative to comparable counterparts without assistance, current housing assistance beneficiaries are less likely to experience rent burden, poverty, or homelessness and are less likely to live in overcrowded units. However, those living in rent-stabilized units (regardless of current or former participant status) are not significantly better off across almost all of the domains of housing and nonhousing outcomes examined than those with similar characteristics who do not live in rent-controlled apartments.

The results suggest that housing assistance programs such as Section 8 and public housing lift people out of poverty and improve housing-related issues more effectively than rent-stabilization programs do. However, this leaves one puzzle incomplete. When we examine the separate effects of housing assistance on a household's material hardships, none of the results are significant. That being said, we identify a more detailed pattern of impact: although current program participants tend to have a lower likelihood of difficulty in their ability to pay food and medical care costs and a lower number of experienced hardships, they still struggle with some other domains of hardship. These results are consistent with a report by the Joint Center for Housing Studies of Harvard University (2013), which demonstrated that families with housing vouchers still exhibited higher food insecurity compared to those who did not obtain assistance. In addition, Berger et al. (2008) studied single-mother households, and their findings indicated that housing assistance programs play only a limited role in reducing material hardship. Other studies

also reported no differences in material needs between market households and subsidized ones (Kirkpatrick & Tarasuk, 2011).

Despite substantial reductions in income poverty among those stably receiving housing assistance, it may seem puzzling not to observe their improvements in other material needs. However, this is not entirely surprising, and it may be in line with prior studies on material hardships and poverty. They tend to suggest that the group deemed to be income poor does not often overlap with the group experiencing material hardship. Those who remain above the poverty line tend to report greater hardship than those at the very bottom do, and reporting on material hardship tends to be more subjective to their own perceptions than to the income measured (Heflin, 2017; Iceland et al., 2021; Mayer & Jencks 1989). Moreover, the improved financial well-being may take longer to materialize in other aspects of life, and sometimes, beneficiaries may need more resources to connect to other services, such as food assistance and medical care.

Some limitations are worth mentioning when contextualizing results. The data lack information on the distinction between tenant-based programs and project-based housing programs; thus, we cannot explore further what specific type of housing contributes to the mildest effects we observed for material hardships. Future research could take different types of housing assistance programs into account to determine the impact of the accessibility of housing assistance on the different economic deprivations that households experience. Additionally, the present study may not generalize to all families across the nation because New York City is a unique case with skyrocketing rent and cost of living. However, this study was based on underlying data that contain comprehensive information on income, housing situations, and other domains of material hardship that low-income renters face, which makes it uniquely valuable for studying housing programs' antipoverty effects. Future research is warranted to study poverty and material hardship outcomes using a larger sample on a national scale. Last, given that the rent control program is not exclusively designed to serve low-income residents, the results of rent stabilization presented in the study may warrant future research on a broader population.

With the limitations of the paper in mind, the study offers several implications. First, we conclude in the present study that for the most part, housing assistance programs succeed in the goal of improving living circumstances for city residents. Program participants experience meaningful improvement in the reduction of their housing-cost burden and the precariousness of their housing situations. In addition, the odds of entering poverty are lower among current housing beneficiaries. However, even though positive effects are documented, current housing assistance programs still appear to be insufficient to help more households to escape from housing deprivation. As we know, the available funds can serve only a small proportion of people who are eligible for the program. Thus, in addition to federal funding, local housing authorities are relatively more flexible in generating funding from diverse sources, such as establishing trust funds or partnering with community organizations and housing developers.

Second, we find that housing subsidy has significant impacts on the reduction of income poverty. Program participants have a lower probability of falling under the poverty line, but the most vulnerable families still struggle to escape from compounded economic hardships. Thus, the large majority of consumption-poor individuals might not be the income-poor. The multiple material disadvantages that families confront may not be fully captured if we look only at their movement along the poverty line. In terms of the economic well-being of families, income measures could be complemented by material consumption measures to better capture the basic needs of vulnerable populations.

Third, although this study testifies to the effectiveness of subsidized housing, it highlights a significant challenge for current participants in housing programs and partially or nonassisted households, particularly in the continuity of program participation. The stable receipt of housing assistance plays a more substantial role in reducing the housing-related deprivation and poverty of program participants than the intermittent receipt of benefits does. Although the housing

programs' capacity to meet households' other basic needs is limited, the interrupted receipt of housing subsidies tends to be linked to more severe material hardship. The findings reveal that housing assistance programs alone are obviously not enough: housing programs alone do not show significant benefits in the multiple domains of household members' lives, although they do show modest positive effects in coping with food and medical care hardships among current housing assistance participants. According to a report by Kingsley (2017), an increasing share of voucher holders or the heads of the household among residents in public housing are older adults with disabilities. These most disadvantaged people may receive top priority in participating in such programs, but their other physical or mental problems may not be solved, which could lead to difficulties in other aspects of daily life. Thus, a more integrated policy model should be considered, and additional support ought to be offered to help disadvantaged families cope with the various domains of their life circumstances. More well-trained social workers should be recruited to provide guidance in assisting low-income households during the housing application process. In addition to this, other support might include helping households to access community resources and community counseling; helping them to secure benefits (such as SNAP or Medicaid); and addressing mental health and other long-term care needs.

In general, housing assistance programs (either public housing or Section 8 vouchers) play a significant role in reducing the housing-related deprivations of low-income households and in helping vulnerable people to leave poverty, but they cannot fully overcome their consumption-related material hardships. In particular, our findings underscore the importance of stability and continuity in the receipt of subsidies. This is because consistent participation in housing programs has a greater positive impact than the intermittent receipt of subsidies does. In addition, a more comprehensive policy should be considered to help vulnerable families cope with the multiple domains of their life circumstances.

Notes

1. Throughout the paper, the poverty measure used is the supplemental poverty measure, which has been well documented as an improved and more accurate measure of U.S. poverty, because the official measure was incomprehensive in many ways (Fox et al., 2015).
2. The Low-Income Housing Tax Credit program has also been served as one of the major sources of subsidized rental units. However, this program applies more to housing developers that construct affordable housing in the private market.
3. Given the recent years' momentum of rent control policy development, as well as the mixed results and ongoing debates about its effectiveness in addressing households' well-being and the local housing market, the data set used in the study serves as a good opportunity to assess rent control programs separately from the other major low-income housing subsidies—for example, the rent regulation signed permanently into New York housing law in 2019. Prior to that, landlords were able to raise rent to the market rate if the rent-stabilized units became vacant. In addition, a unit would stop functioning as rent stabilized if certain conditions applied, such as if the landlord renovated the apartment, earned a certain level of income (about \$200,000 in 2019), or took over the apartment for their own use. The regulation changes made in 2019 altered these conditions to better preserve affordable units and protect tenants (NY Legislative Assembly, 2019). However, rent-controlled or rent-stabilized units are prevalent in only a few major metropolitan areas and states. Their coverage is much lower than that of other major housing assistance programs. Therefore, in what follows, we primarily focus on low-income housing assistance programs, summarizing their effects on households' economic well-being.

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Notes on Contributor

Julie Cai is an economist at the Center for Economic and Policy Research. Her research focuses on economic instability, antipoverty policies, and low- and moderate-income families and children.

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