

Housing Instability and Health in the Great Recession*

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ABSTRACT

The “Great Recession” that began in 2007 has been characterized not only by high levels of unemployment but also by losses in housing stability for many Americans. Despite the increased incidence of housing instability, there is limited research about the scope of the problem during this recession or its effects on the health of those experiencing foreclosure, eviction, payment delinquency, or other housing problems. In this paper we will use data from the new Michigan Recession and Recovery Study (MRRS) to examine associations between various forms of housing instability and a range of health indicators and health behaviors. Initial results show that disadvantaged groups, including less educated individuals and African Americans, are at greater risk of many forms of housing instability. Even net of sociodemographic characteristics, initial multivariate analyses reveal that various measures of housing instability are associated with greater likelihood of poor health outcomes, especially depression.

INTRODUCTION

The “Great Recession” that began in 2007 has been characterized not only by high levels of unemployment but also by losses in housing security for many Americans. Whether due to the inability to pay rent or mortgages because of income loss, problems meeting payments for loans with adjustable interest rates, or because of other factors, the number of Americans who have lost their place of residence has increased dramatically (Wong 2010). According to the Joint Center for Housing Studies, 2.1 million loans were in foreclosure process in the first quarter of 2010, nearly quadruple the number three years earlier (Joint Center for Housing Studies of Harvard University 2010). Another set of households may not yet have been evicted or foreclosed upon, but are falling behind in payments, while other individuals may be moving in with family or friends, or taking others in, in order to minimize costs.

Despite the increased incidence of housing instability, there is limited research about the scope of the problem during this recession or its effects on the health of those experiencing foreclosure, eviction, payment delinquency, or other housing problems. The literature suggests that housing instability is a stressful life event that could influence health through its impact on mental health or health behaviors, but also that health problems may also be a risk factor for subsequent housing loss. However, prior research has often studied a single type of housing instability, such as homelessness, while ignoring others, and different types of housing instability may vary in stressfulness or in other mechanisms linking them to health. Moreover, many prior housing instability studies have used unrepresentative samples – either advantaged individuals who own homes, or very disadvantaged individuals, such as those with preexisting and severe mental health problems. These prior studies have provided suggestive evidence for a link between housing instability and health but may not provide reliable information about the likely consequences of the Great Recession for health among Americans more broadly.

Prior studies have also faced limitations because of a focus on housing instability, to the exclusion of related life events. For many households, housing instability is a component of a complex cascade of events involving financial instability and/or employment problems. Prior studies have sometimes studied only those who have already lost housing, making it impossible to understand the consequences of housing instability itself, net of the other events in such a cascade of related problems. In this study, we can better isolate the direct connections between housing instability and health by accounting for and assessing the roles of competing stressful events like income shocks or job losses, and by using a more representative sample of Americans who may be experiencing some or all of these events.

In this paper, we will use data from a novel new panel survey of a random sample of individuals in three counties in Southeast Michigan to examine associations between various forms of housing instability and a range of health indicators and health behaviors. Although the data we present here are cross sectional, respondents were asked detailed information about the timing of certain events, such as the timing of recent job losses or unemployment spells, prior experiences of housing instability, and date of onset for existing health conditions. Using these retrospective reports, we will be better able than many prior studies to identify the temporal ordering of events – income shocks, housing losses, and other events. These novel and timely descriptive findings will also form the baseline for our ongoing panel survey, which returns to the field in the spring

of 2011. A better understanding of the nature and extent of housing instability and its connections with the health among Americans in the Great Recession will be important for both academics and policymakers.

BACKGROUND

Different forms of housing instability and their predictors

The term “housing instability” has been used in the literature to describe a number of different housing problems. Some problems, such as homelessness or frequent moves, could affect anyone, while other problems are likely to be restricted to renters, such as being evicted, or to owners, such as being foreclosed upon. Common measures of housing instability in the literature include frequent moves, difficulty paying rent, spending more than 30 to 50 percent of household income on housing, living in crowded conditions, being evicted, and being homeless (Gilman, Kawachi, Fitzmaurice, and Buka 2003; Kushel, Gupta, Gee, and Haas 2006; Ma, Gee, and Kushel 2008; Phinney, Danziger, Pollack, and Seefeldt 2007; Tsemberis, McHugo, Williams, Hanrahan, and Stefanic 2007). In studies focused on welfare populations (Phinney, Danziger, Pollack, and Seefeldt 2007; Wood and Rangarajan 2004), moving in with others to save on housing costs, or “doubling up,” has also been used an indicator of housing instability.

Conditions prevailing during the Great Recession suggest that housing instability is on the rise and that instability risk may be high even for those who do not own their homes. As of April 2010, there was an employment deficit of 11 million jobs, creating significant reduction in household income available for housing. The number of families who spent more than half of their yearly income on housing jumped by one third in 2008 to 16%, and more than half of 4.5 million low-income single-parent households spent 60% or more of their incomes on housing in 2008 (Joint Center for Housing Studies of Harvard University 2010).

Homeowners’ instability due to foreclosure is another important housing problem, but has been understudied relative to the housing challenges facing lower income groups and renters, most likely because of the relative rarity of this event since the Great Depression. Given the increase in sub-prime loan availability, the greater likelihood that the holders of these loans will default (see Center for Responsible Lending 2007), and the high rates of unemployment during the current recession, the number of households that have been foreclosed upon or who are in the foreclosure process has grown tremendously. Realty Trac, which monitors foreclosures, reported a 120 percent increase in the number of foreclosures between 2007 and 2009, with a record 2.21 percent of all housing units receiving at least one foreclosure notice in 2009 (Norman 2010). The Joint Center for Housing Studies reports that since a first rise in loan defaults in early 2007 through the first quarter of 2010, servicers covering 85 percent of mortgage loans reported that 6.1 million foreclosure notices had been issued on first-lien loans (Joint Center for Housing Studies of Harvard University 2010). It is important to remember that these problems extend beyond homeowners, as even renters who meet their monthly rent payments may be at risk for housing instability if their landlords are foreclosed upon. Therefore, we study multiple forms of housing instability, with a sensitivity to which groups are likely to be at risk of distinct kinds of housing problems.

Prior studies examining the factors associated with housing instability have also tended to focus on specific sub-populations such as home owners or, alternatively, very disadvantaged groups.

Among home owners, prior research finds that lower-income households are more likely to miss mortgage payments or be foreclosed upon (see Quercia and Stegman 1992 for a review), even controlling for characteristics of the loan product (Van Order and Zorn 2002). However, none of these studies were conducted in the current period during which subprime loans have proliferated (Herbert and Belsky 2008). Studies examining risk factors for housing instability among the disadvantaged find that prior homelessness, broken social support systems, experiences with domestic violence, prior mental health problems, and criminal convictions are all predictors of multiple moves and future homelessness (Browne and Bassuk 1997; Entner Wright, Caspi, Moffitt, and Silva 1998; Lepore, Evans, and Schneider 1992; Phinney, Danziger, Pollack, and Seefeldt 2007). Among current and former welfare recipients, low education levels and use of drugs other than marijuana were associated with evictions (Phinney, Danziger, Pollack, and Seefeldt 2007).

Another set of studies examines events that trigger housing instability, rather than the individual characteristics of those experiencing the event. These studies find that dissolution of a household due to death or divorce, job loss (and the resulting loss of income), and health crises (which may result in a loss of earnings as well as an increase in expenses) are the most common reasons for an exit from home ownership (see Herbert and Belsky 2008 for a thorough review).

Housing Instability and Health: Mechanisms and Pathways

Housing instability may affect health through a number of different pathways. First, the stress associated with a housing loss or the changes in environment that can result may be the mechanism through which housing instability affects health. For example, losing housing and doubling up with others could lead to crowded housing, and a set of studies from the field of human ecology indicates that cognitive states and coping mechanisms may mediate the association between crowded housing and poor health. Crowded housing may cause individuals to physically and psychologically withdraw, get insufficient sleep or rest, and not receive care from others, all of which may lead to detrimental physical and mental health outcomes. These studies predominately focus on psychological outcomes, over-stimulation or over-arousal, interference with goal-directed activity, and loss of personal freedom and control. Researchers hypothesize that these outcomes may relate to stress processes and may negatively impact other physical and mental health outcomes (Gove, Hughes, and Galle 1979; Schmidt and Keating 1979; Vine 1981).

Several studies also show associations between experiences of eviction/foreclosure and mental health problems, including depression and anxiety (Bennett, Scharoun-Lee, and Tucker-Seeley 2009). Some studies suggest that foreclosure is a risk factor for depression because it reduces feelings of personal control and generates feelings of stress. This may cause those who experience foreclosure to behave in ways that promote further negative life events, such as increasing tobacco and alcohol use, leading to sleep dysregulation and weight gain. In turn, both depression and negative coping behaviors are related to physical health outcomes, such as cardiovascular disease (Bennett, Scharoun-Lee, and Tucker-Seeley 2009).

However, it is important to acknowledge that housing loss is often not an isolated event. Housing instability may be associated with health because it is the outcome of a catalyzing but distinct stressful event, such as an income or employment shock. Mental health problems also could be

triggered by more chronic stressors like longer term financial strain (i.e., difficulty paying the rent and other bills or running out of funds each month) or unemployment (Dooley, Fielding, and Levi 1996; Weich and Lewis 1998), which lead to housing instability. We will investigate the cascades of events surrounding housing instability to better clarify the ways housing problems are associated with health.

Moreover, an alternative explanation for the connection between health and housing instability is a prior health problem that leads to financial or housing instability. Studies utilizing data from the current recession and studying only individuals who lost their homes have found that in at least some cases, foreclosure was linked to prior health problems (Pollack and Lynch 2009; Robertson, Egelhof, and Hoke 2008). Robertson and colleagues (2008) found that 70% of their respondents reported either medical causes of foreclosure or experienced medical disruption before foreclosure. Paying for medications and other treatments may drain funds, leading to an inability to make housing payments, and the resulting housing instability could worsen already compromised or declining health (Bennett, Scharoun-Lee, and Tucker-Seeley 2009; Pollack and Lynch 2009; Robertson, Egelhof, and Hoke 2008). We will explore pre-existing health problems or recent health changes as potential catalysts for housing instability in our analyses, to better understand the directionality of the association.

In the present study, then, we use a unique new data source to build on prior research on the connection between housing instability and health and to address some of its limitations, all in the context of the current recession. Specifically, we ask the following research questions: First, are experiences of housing instability associated with worse health and more harmful health behaviors? Second, are different forms of owner-related versus renter-related housing instability differentially associated with health and health behaviors? Third, are these associations robust to adjustment for recent employment disruptions or negative income shocks? Fourth, are they robust to adjustment for prior health problems?

DATA AND METHODS

Data

Data come from the Michigan Recession and Recovery Study (MRRS). The MRRS was designed to follow a stratified random sample of English-speaking adults aged 19-64 who lived in Southeastern Michigan (Macomb, Oakland, and Wayne counties) at the time of the initial data collection in winter, 2010. The MRRS oversampled African Americans and includes mainly African American and non-Hispanic white respondents, reflecting the residential composition of the area. The MRRS survey instrument is unique in its depth and breadth, covering eight major domains: housing instability, demographic characteristics, employment and the labor market, income and assets, health and mental health, material hardships, credit and debt, and public program use. We use data from the first wave of in-person survey interviews. The second wave will be administered via in person interviews (or by telephone if the respondent has moved out of the area) in spring of 2011, and subsequent future waves are also planned. Administration of the first survey interview took approximately 60 minutes, and respondents were paid between \$50 and \$120 for their participation. A total of 915 respondents were interviewed, with a survey response rate of 82.8%.

Measures

Health Measures

For the extended abstract, we show figures for three measures of health or health behavior: self-rated health, depression, and alcohol use. Self-rated health is measured here with the typical item: “Would you say that your health in general is excellent, very good, good, fair, or poor?” We collapsed the item so that poor or fair health =1 while excellent, very good, or good health = 0, a typical cut point. In our sample, 16% of respondents reported fair/poor self rated health. Depression was measured using the Patient Health Questionnaire (PHQ), a validated 9-item scale based on the diagnostic criteria for major depressive disorder in the Diagnostic and Statistical Manual Fourth Edition (DSM-IV) (Kroenke and Spitzer 2002). The PHQ-9 has two components that: (1) assess symptoms and functional impairment over the past 2 weeks to make a tentative diagnosis, and (2) can be used to derive a severity score (designed to help clinicians select and monitor treatment). Respondents were classified as meeting symptomatic criteria for major depression according to guidelines provided by creators of the scale, so that meeting criteria = 1 and not meeting criteria = 0. Using this measure, 7.3% of our sample was classified as meeting criteria for depression. Harmful use of alcohol was measured using the Alcohol Use Disorders Identification Test (AUDIT), a ten item scale used to measure recent alcohol use, alcohol dependence symptoms, and alcohol related problems. A cut point recommended by the scale’s creators was used to distinguish harmful and hazardous use (=1) from less use (=0), with 19.5% of our sample meeting the criteria for an alcohol use problem.

There are many additional health measures to draw on as we complete our analyses for the PAA meeting. MRRS respondents reported on multiple chronic conditions – e.g., heart disease, high blood pressure, asthma, diabetes, emotional/psychiatric problems – which come from the National Health Interview Survey (NHIS). Respondents were asked if they had been diagnosed by a health professional as having these conditions, and, if so, they were asked to provide the date of onset and whether or not the condition worsened in the prior 12 months. Another key measure of current mental health was captured with the GAD-7, a seven item measure of Generalized Anxiety Disorder that is part of the PHQ, to measure anxiety symptoms over the last month. We also have standard measures of tobacco and other substance use and indicators of splitting pills or missing medications or medical appointments, and will consider these as additional outcomes.

Housing Insecurity Measures

All respondents were asked about several types of housing instability – whether they had: moved because of cost in past three years (8.5% of sample), moved 3 or more times in past three years (12.6%), been homeless at any time in past 12 months (1.9%), or moved in with someone else in past 12 months to share household expenses (6.9%). Current home owners were also asked if they were currently behind on mortgage payments (9.5% of owners) and whether their lender or bank had started the process of foreclosing on their home (3.5% of owners). Current renters were asked if they were currently behind on rent payments (9.5% of renters), and whether they had been evicted in past 12 months (6.4% of renters). All measures of housing instability are dichotomous. For some analyses, we also classified respondents’ housing status as owner, renter, or other – those who reported “other” status were not included in some analyses because they did not answer questions pertaining specifically to owners or renters.

Other Measures

In multivariate analyses, we include measures of the respondent's age in years, gender, race (African American versus not African American), educational attainment (less than high school, high school or GED, some college, bachelor's degree or more), partnership status (married or cohabiting versus not), and current employment status (employed, unemployed, or not in the labor force). Other measures that will be included in the final analyses include indicators of employment disruptions, number of months spent unemployed in recent several years, indicators of income shocks, incidence of prior housing instability, and the timing of these events.

Methods

We will present descriptive bivariate and multivariate analyses to explore our research questions. All analyses account for the complex sample survey design by using the "svy" commands in Stata 11SE, and weights are used that address sample non-response and make the sample representative of adults ages 19 to 64 years old living in the three-county area in Southeastern Michigan.

PRELIMINARY RESULTS

Here we present preliminary bivariate and multivariate results to illustrate the measures of housing instability that we will explore further over the coming months and to demonstrate that associations are present between these and some of our health measures. Below we also detail the future plans for analyses that we will complete prior to the PAA meeting.

Table 1 presents characteristics for MRRS respondents overall and by category of housing instability outcome, using measures of housing instability available for the entire sample, whether renter, owner, or other. For the purposes of bivariate and multivariate analyses presented here, we created three categories for each measure of housing instability: (1) stable (had no housing instability on any of the measures), (2) had the focal type of housing instability, or (3) did not have the focal form of housing instability, but had some other form of housing instability. This helps to isolate the difference between those who are stably housed and those who are having a particular housing problem. If we had used a dichotomous variable, e.g., experienced eviction versus no eviction, we would be comparing people who had been evicted both to those who had not been evicted and to those who had some other type of housing instability. It is reasonable to assume that the latter two groups may differ in important ways that would lead to incorrect estimates if we used such a heterogeneous comparison category.

The first row of Table 1 shows the average age of the sample overall in the first column, and then shows the mean age of respondents who did and did not experience a particular form of housing instability. For example, those who moved due to cost in the past three years were younger than those who were stably housed (37.7 versus 44.4 years), and the difference was statistically significant using a Wald test ($p = .002$). In fact, those experiencing each form of housing instability are significantly younger than the stably housed, as shown in subsequent columns.

For the sample overall, Table 1 shows that those who moved due to cost in the past three years are marginally more likely to be female than the stably housed, while they are significantly less likely to be married or cohabiting. African Americans have higher likelihood of all forms of

housing instability examined here, and less educated respondents are more likely to have experienced moves due to cost, homelessness, and doubling up. Both the least and most educated respondents are overrepresented among those who moved frequently in the past several years. The unemployed and those not in the labor force are more likely to have moved due to cost recently, while renters and other non-owners are more likely to have experienced all forms of housing instability. Finally, respondents who moved due to cost, experienced multiple moves, and those who experienced homelessness were significantly more likely to have fair/poor self rated health at the time of the interview. Every measure of housing instability was associated with a greater likelihood of meeting PHQ criteria for depression, while only doubling up was associated with a greater likelihood of meeting AUDIT criteria for harmful and hazardous alcohol use.

Tables 2 and 3 present the same bivariate comparisons for home owners or renters only, focusing on instability measures specific to these groups. There are fewer significant differences between those experiencing housing instability and the stably housed in Tables 2 and 3 compared with Table 1, because the subsamples are more homogenous in their characteristics than the MRRS sample overall. Nonetheless, bivariate comparisons in Table 2 reveal that those who are behind on mortgage payments are significantly younger than those who are stably housed, and they are more likely to have some college but less likely to have a bachelor's degree or more. African American homeowners are overrepresented among those who are behind on mortgage payments or currently in foreclosure. Table 3 shows the characteristics of renters in the MRRS sample and also reveals that only race and educational attainment distinguish those who are behind on their rent or have been evicted from their stably housed counterparts.

In Table 4, we present a summary of results from multivariate logistic regression models. We present odds ratios and 95% confidence intervals in parentheses; statistically significant odds ratios (significantly different than 1.0) are bolded. Models are presented for the sample overall in the first panel and for the home owner and renter samples in the second panel, for each housing instability measure. Models predicting fair/poor self rated health, PHQ depression, and AUDIT harmful and hazardous alcohol use are presented in subsequent rows. Model 1 for each outcome includes controls for age in years, female sex, black race, and partnership status, while Model 2 adds controls for educational attainment and employment status.

The results presented in Table 4 suggest that even net of the unequal distribution of housing instability experiences across the sample, many measures of housing instability are significantly associated with greater likelihood of poor health outcomes, particularly depression as measured by the PHQ scale. However, they are not associated with harmful and hazardous alcohol use. In many cases, these associations are robust to adjustment for respondents' human capital characteristics and employment status, even though our sample is not very large. In fact, these associations are significant in some cases for which the bivariate associations did not show a significant difference, partially because of the strongly socially patterned distribution of these experiences. Once we adjust for race and other characteristics, some significant associations are revealed or strengthened. The associations presented here provide incentive for a refinement of the analysis and further conceptual work to best address the similarities and differences across various measures of housing instability and their association with health.

FUTURE PLANS

In preparing for the PAA 2011 meeting, we plan several major additions to the initial results presented here. We will first carefully examine the clustering of housing instability experiences, and consider creating aggregated measures of the count of such experiences. We will also examine the relative severity of various types of housing instability and experiment with various severity scales that incorporate the range of possible types of housing instability, to gain more power for our multivariate analyses. Then, we will use the retrospectively reported data on employment histories, earlier experiences with housing instability, and preexisting health problems to classify respondents in terms of the ordering of events. This will further refine our estimates and provide a clearer view of the nature and directionality of the relationships between housing instability and health.

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Table 1. Characteristics of the MRRS sample overall and by category of housing instability.

	Overall	Moved due to cost (3 yrs)				Multiple Moves (3 yrs)				Homeless (past yr)				Doubled up (past yr)			
		Stable	Yes	p	Other HI	Stable	Yes	p	Other HI	Stable	Yes	p	Other HI	Stable	Yes	p	Other HI
Age in years	42.2 (0.78)	44.4 (0.87)	37.7 (1.56)	0.002	36.2 (0.81)	44.4 (0.87)	34.0 (1.01)	<.001	38.7 (1.08)	44.4 (0.87)	34.4 (2.20)	<.001	36.8 (0.81)	44.4 (0.87)	34.0 (1.34)	<.001	37.5 (0.97)
% Female	50.8%	49.8%	66.2%	0.058	48.1%	49.8%	47.1%	0.083	58.5%	49.8%	58.2%	0.463	53.1%	49.8%	45.1%	0.289	56.1%
% Black	24.9%	19.4%	46.1%	<.001	35.7%	19.4%	31.3%	<.001	44.6%	19.4%	72.0%	<.001	36.3%	19.4%	48.4%	<.001	35.7%
% Married/Cohab	65.1%	67.7%	36.0%	<.001	68.3%	67.7%	61.1%	0.203	56.9%	67.7%	55.4%	0.165	59.0%	67.7%	53.5%	0.149	60.4%
Education																	
% <HS	8.7%	7.0%	22.1%	<.001	8.8%	7.0%	12.1%	<.001	13.2%	7.0%	39.9%	<.001	10.8%	7.0%	17.9%	<.001	11.1%
% HS	17.7%	16.0%	38.8%		14.6%	16.0%	15.2%		26.9%	16.0%	19.2%		21.9%	16.0%	14.9%		23.9%
% Some Coll.	35.5%	36.7%	26.3%		35.0%	36.7%	23.9%		39.1%	36.7%	28.1%		32.7%	36.7%	45.5%		28.3%
% BA+	38.2%	40.2%	12.8%		41.6%	40.2%	48.8%		20.8%	40.2%	12.9%		34.5%	40.2%	21.7%		36.7%
Employment																	
% Employed	65.0%	65.1%	47.8%	0.048	71.9%	65.1%	70.8%	0.301	60.0%	65.1%	45.5%	0.309	66.1%	65.1%	62.9%	0.522	65.3%
% Unemployed	12.3%	11.3%	19.5%		13.1%	11.3%	9.9%		19.0%	11.3%	27.4%		14.1%	11.3%	18.9%		13.8%
% NILF	22.7%	23.7%	32.7%		15.0%	23.7%	19.3%		21.1%	23.7%	27.1%		19.8%	23.7%	18.3%		20.9%
Housing status																	
% Rent	27.7%	17.3%	74.6%	<.001	44.7%	17.3%	62.3%	<.001	46.8%	17.3%	59.0%	<.001	53.2%	17.3%	59.3%	<.001	51.7%
% Own	63.8%	74.4%	12.6%		47.8%	74.4%	27.5%		45.1%	74.4%	17.9%		38.8%	74.4%	19.9%		42.9%
% Other	8.6%	8.4%	12.8%		7.5%	8.4%	10.3%		8.1%	8.4%	23.2%		8.0%	8.4%	20.8%		5.3%
% Poor/Fair SRF	16.0%	13.9%	31.7%	0.024	17.1%	13.9%	13.3%	0.009	27.8%	13.9%	38.0%	0.027	20.3%	13.9%	20.6%	0.102	21.7%
% PHQ depress	7.3%	5.3%	18.0%	0.011	9.6%	5.3%	9.7%	0.02	13.9%	5.3%	23.1%	0.008	11.3%	5.3%	11.5%	0.024	12.2%
% AUDIT alcoh	19.5%	19.3%	19.4%	0.945	20.4%	19.3%	21.5%	0.878	19.0%	19.3%	29.6%	0.549	19.4%	19.3%	34.8%	0.020	15.4%

Table 2. Characteristics of MRRS home owners overall and by category of home owner-specific housing instability.

	Overall	Behind on Mortgage				In Foreclosure			
		Stable	Yes	p	Other HI	Stable	Yes	p	Other HI
Age in years	45.8 (0.65)	47.2 (0.71)	42.4 (1.76)	0.025	35.0 (1.19)	47.2 (0.71)	44.4 (1.48)	0.132	37.7 (1.06)
% Female	47.9%	49.2%	51.2%	0.136	28.5%	49.2%	42.9%	0.492	40.6%
% Black	14.4%	12.4%	31.2%	0.007	16.2%	12.4%	25.3%	0.026	24.3%
% Married/Cohab	81.1%	81.1%	79.4%	0.914	82.6%	81.1%	68.2%	0.370	84.2%
Education									
% <HS	3.3%	3.3%	2.6%	0.008	4.2%	3.3%	2.7%	0.807	3.4%
% HS	15.9%	16.4%	15.5%		11.5%	16.4%	22.7%		11.3%
% Some Coll.	34.4%	33.5%	56.8%		16.5%	33.5%	33.6%		40.3%
% BA+	46.4%	46.9%	25.1%		67.9%	46.9%	41.0%		45.0%
Employment									
% Employed	9.3%	67.3%	67.7%	0.336	82.1%	67.3%	64.5%	0.532	76.6%
% Unemployed	68.5%	9.1%	14.1%		5.4%	9.1%	13.1%		9.5%
% NILF	22.3%	23.6%	18.2%		12.5%	23.6%	22.4%		13.9%
% Poor/Fair SRH	12.5%	11.7%	22.2%	0.249	9.9%	11.7%	24.8%	0.315	14.6%
% PHQ depress	5.2%	4.9%	7.9%	0.651	4.9%	4.9%	13.1%	0.236	4.8%
% AUDIT alcohol	18.3%	18.2%	10.4%	0.147	29.7%	18.2%	8.4%	0.499	21.7%

	Overall	Behind on Rent			Other HI	Evicted (past year)			
		Stable	Yes	p		Stable	Yes	p	Other HI
Age in years	37.4 (1.18)	39.3 (1.41)	36.5 (2.27)	0.183	35.7 (1.16)	39.3 (1.41)	35.8 (2.04)	0.131	35.9 (1.27)
% Female	56.9% 4.1%	53.7%	55.8%	0.617	60.3%	53.7%	62.3%	0.653	59.1%
% Black	46.1% 4.4%	46.3%	71.4%	0.018	40.7%	46.3%	87.3%	0.001	40.5%
Education									
% <HS	19.9%	20.8%	15.6%	0.048	20.0%	20.8%	37.9%	0.035	16.8%
% HS	22.9%	19.0%	41.2%		22.9%	19.0%	22.2%		26.5%
% Some Coll.	36.1%	43.4%	36.4%		29.0%	43.4%	34.9%		29.6%
% BA+	21.1%	16.8%	6.8%		28.2%	16.8%	5.0%		27.0%
% Married/Cohab	41.9%	37.2%	41.3%	0.466	46.6%	37.2%	39.7%	0.442	46.5%
Employment									
% Employed	58.1%	56.4%	48.0%	0.415	61.9%	56.4%	30.7%	0.211	63.3%
% Unemployed	18.3%	20.6%	30.6%		13.7%	20.6%	22.9%		15.7%
% NILF	23.5%	23.1%	21.5%		24.4%	23.1%	46.4%		21.0%
% Poor/Fair SRH	24.1%	23.1%	39.3%	0.203	21.9%	23.1%	41.4%	0.155	22.7%
% PHQ depress	12.8%	9.0%	21.3%	0.322	14.7%	9.0%	25.7%	0.210	14.5%
% AUDIT alcohol	19.6%	20.8%	24.9%	0.589	17.3%	20.8%	11.8%	0.660	19.5%

Table 4. Summary of results (odds ratios and CIs) from survey logistic regression models predicting health outcomes.

	Sample Overall							
	Moved due to cost (3 yrs)		Multiple Moves (3 yrs)		Homeless (past yr)		Doubled up (past yr)	
Fair/Poor SRH								
Model 1	2.96	(1.00 -8.73)	1.49	(0.65 -3.43)	4.56	(1.46 -14.21)	2.07	(0.93 -4.61)
Model 2	2.39	(0.85 -6.70)	1.52	(0.63 -3.64)	3.56	(1.09 -11.61)	2.06	(0.92 -4.61)
PHQ depress								
Model 1	3.80	(1.20 -12.04)	2.60	(1.24 -5.47)	7.19	(2.37 -21.80)	3.03	(1.16 -7.90)
Model 2	2.61	(0.91 -7.48)	2.90	(1.20 -7.03)	5.61	(1.85 -17.00)	3.10	(1.15 -8.33)
AUDIT alcohol								
Model 1	1.03	(0.54 -1.95)	0.83	(0.49 -1.43)	1.83	(0.65 -5.13)	1.835	(0.76 -4.42)
Model 2	0.79	(0.33 -1.86)	0.84	(0.53 -1.34)	1.38	(0.44 -4.35)	1.747	(0.70 -4.35)
	Home Owners Only				Renters Only			
	Behind on Mortgage		In Foreclosure		Behind on Rent		Evicted (past yr)	
Fair/Poor SRH								
Model 1	2.60	(1.04 -6.50)	2.68	(0.79 -9.07)	2.26	(0.95 -5.37)	2.36	(0.94 -5.93)
Model 2	2.57	(0.88 -7.48)	2.83	(0.74 -10.84)	2.18	(0.81 -5.88)	1.84	(0.75 -4.52)
PHQ depress								
Model 1	1.83	(0.62 -5.41)	2.78	(1.32 -5.86)	4.36	(1.14 -16.63)	5.06	(1.49 -17.17)
Model 2	1.62	(0.44 -6.02)	2.35	(0.91 -6.09)	3.05	(0.81 -11.48)	4.16	(1.34 -12.93)
AUDIT alcohol								
Model 1	0.48	(0.13 -1.78)	0.37	(0.06 -2.14)	1.60	(0.48 -5.37)	0.68	(0.13 -3.51)
Model 2	0.42	(0.12 -1.53)	0.39	(0.07 -2.31)	1.50	(0.46 -4.86)	0.69	(0.14 -3.37)

Note: Model 1 includes controls for age in years, female sex, black race, and partnership status. Model 2 adds controls for educational attainment and employment status.