

Stable housing can significantly improve health outcomes in women living with HIV

Unstable housing, including homelessness, is a key socioeconomic determinant of poor health outcomes and premature death in the United States. Housing-insecure individuals are more likely to delay seeking medical care due to costs, lack of health insurance, or logistical barriers such as transportation. While unstable housing is a public policy concern for all populations, it is even more critical for people with a serious chronic health condition such as HIV.

Sufficient adherence to daily antiretroviral (ART) medication has extended the lives of people living with HIV (PLHIV) since the mid-1990s, and has become the ultimate goal of HIV care and treatment. Unfortunately, unstable housing can present a barrier to ART adherence and a risk factor for unsuppressed viral load, which increases HIV-related illness as well as the likelihood of transmitting HIV to sexual partners, needle sharing partners, and infants.

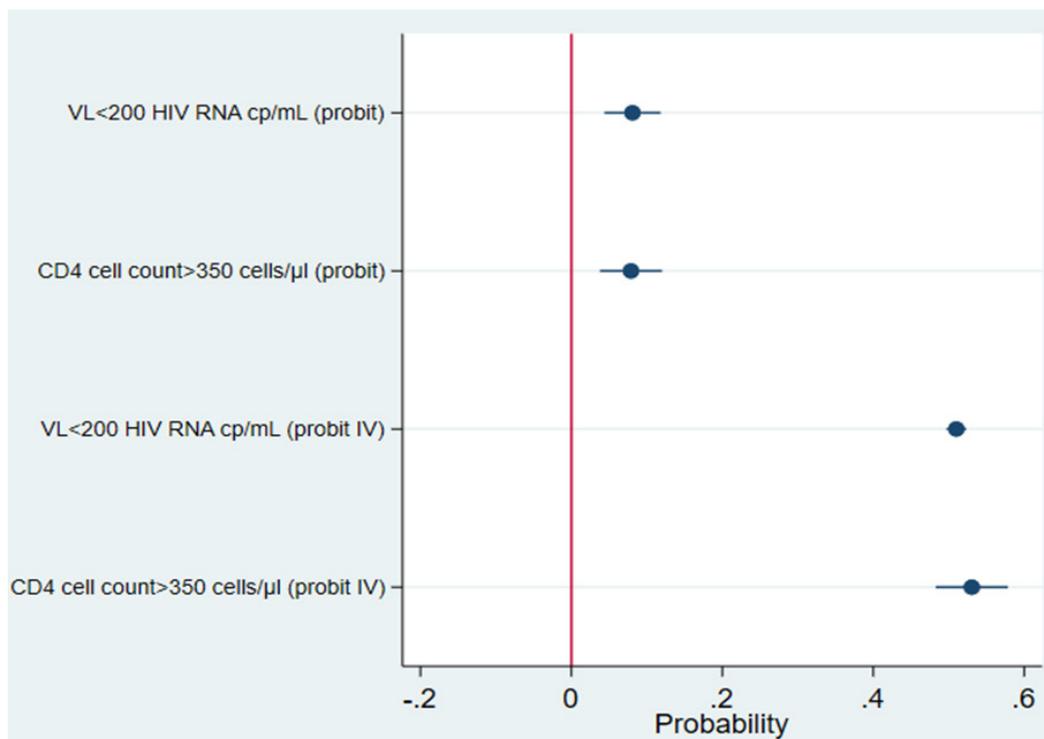


Fig. 1. . Positive effect of stable housing on viral suppression and CD4 cell count in women living with HIV. Notes: The probit IV models included Housing Opportunities for People with AIDS (HOPWA) funding per person newly infected with HIV, as an instrumental variable to more accurately measure the effects of housing on health. All results were significant at an alpha level of 0.01.

This research analyzed the causal effect of unstable housing on two HIV adherence markers: viral suppression (viral load < 200 HIV RNA copies per ml) and adequate CD4+ T-cell count (CD4 > 350 cells per μl).

Longitudinal data from 3,082 participants in the Women's Interagency HIV Study (WIHS) database were analyzed. WIHS is the largest and longest-running cohort of women living with HIV in the United States with participants in Brooklyn; the Bronx; New York; Chicago; Washington, DC; Los Angeles, and San Francisco. Analyzing data over a 20-year period (1995-2015) allowed the authors to examine the pathways through which housing affected HIV outcomes over time, specifically: time utilization, health depreciation, and income effect.

The study's conceptual framework suggests that for patients with HIV, the effort of looking for housing reduces the time they spend on medical appointments and their ability to regularly take medication. Unstable housing introduces further stress and mental health issues to an already vulnerable population. And lack of housing impacts an individual's finances due to its correlation with unsteady employment and low income.

Initial results showed that women who were stably housed had an increase of 8.1 percentage points in the likelihood of being virally suppressed, and an increase of 7.8 percentage points in the probability of having adequate CD4 cell counts. After including funding from the Housing Opportunities for People with AIDS (HOPWA) per person newly infected with HIV (as instrumental variable), stable housing increased viral suppression by 51 percentage points and increased the likelihood of adequate CD4 cell counts by 53 percentage points (Fig. 1). Measuring HOPWA allocations per person *newly* infected with HIV provided gave a more accurate picture of the resources available to address housing instability among PLHIV when compared to total HOPWA allocations, which were based on the number of historical AIDS cases regardless of whether the people with AIDS were still alive.

This analysis showed that the probability of stable housing increased with increased funding from HOPWA, and lower HOPWA funding allocations were strongly associated with an increased likelihood of unstable housing. This indicates that the availability of HOPWA funds per person newly infected with HIV is a good predictor of unstable housing. Additional findings revealed that patients experiencing unstable housing had decreased use of health care providers, mental health/counseling providers, and less continuous care.

This study reiterates the principle that "housing is health", and provides further empiric evidence that addressing housing status is just as important for improving clinical outcomes as addressing immediate physical needs. Housing vouchers and other housing assistance programs such as HOPWA that focus on making housing more affordable and accessible for low-income populations, and HIV-positive populations in particular, are urgently needed.

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Publication

[The effect of unstable housing on HIV treatment biomarkers: An instrumental variables approach.](#)

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