Examining Housing Instability and Care Outcomes among Women Living with HIV

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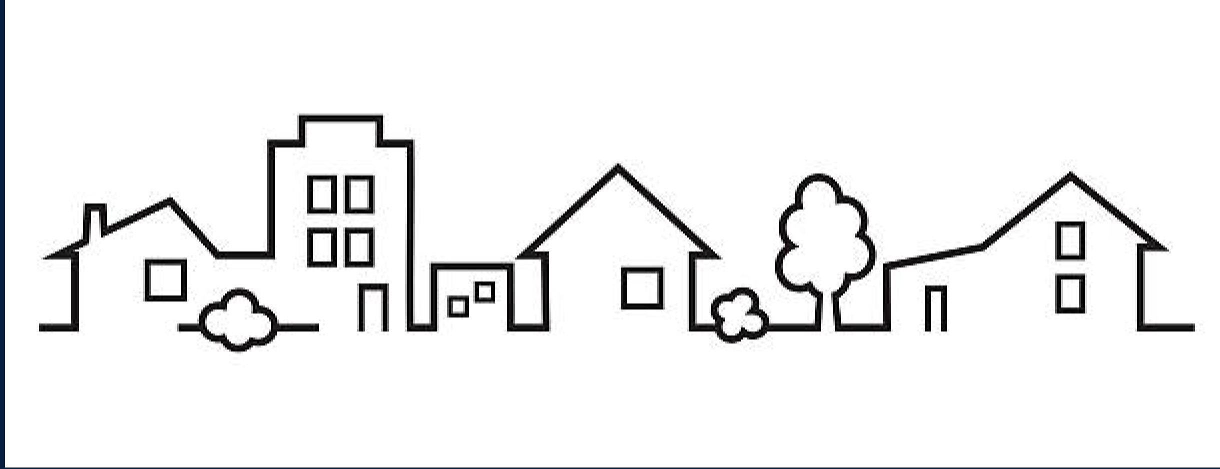

Research Supplement to Promote Diversity in Health-Related Research

Supplement to R01: Women-centered HIV care practices that facilitate HIV care retention and viral suppression in the presence of adverse sociocultural factors (PI: Trepka)

National Institutes of Minority Health and Health Disparities

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Background

- 263,900 women living with diagnosed HIV in the US in 2019
- Low prevalence of HIV in the general population; high prevalence in:
  - Geographic hotspots
  - Socially marginalized
  - Economically disadvantaged communities in urban areas
  - Racial and ethnic minorities
  - Sexual and gender minorities

CDC, 2022; Aziz & Smith, 2011

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Women living with HIV (WLH)

- 26% of Miami-Dade Ryan White Program recipients are WLH
- 70% of those WLH are living at or below 100% of the federal poverty level
- WLH challenges
    - Adverse residential environments (i.e., elevated rates of poverty, crime and illicit drug use)
    - Experiences of stigma and discrimination
    - Low health literacy
    - Lack of insurance coverage and transportation

HRSA, 2020; Aidala et al., 2016; Riley et al., 2019

Housing Instability

- Homelessness: most extreme and visible form of housing deprivation
- Housing instability: encompasses a wide range of experiences (e.g., moving frequently, staying in overcrowded conditions, exchanging sex for shelter)
- WLH are vulnerable to housing instability and are often at risk of experiencing homelessness
- Miami-Dade: affordable housing crisis
  - 50% of all households are cost-burdened
    - Renters, low-wage workers, racial and ethnic minorities are the worse off in terms of affordability

US DHUD, 2014; Riley et al., 2019; Parashar, 2016; Florida & Pedigo, 2022

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HIV, Housing, and Care and Treatment of HIV

- Access to care and adherence to antiretroviral therapy (ART) is essential to achieving sustained viral suppression
- WLH experiencing homelessness and housing instability are:
  - Less likely to be linked to treatment
  - Have suboptimal care outcomes even when linked to care

Riley et al., 2007; Losina et al., 2009; CDC, 2020; HIV.gov, 2021

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Specific Aims

Aim 1: Identify groups of women with similar housing patterns, identify sociodemographic correlates of group membership, and explore how group membership predicts HIV outcomes.

Aim 2: Explore experiences of housing instability qualitatively, giving particular attention to sociocultural factors, competing demands, and the role of housing instability on adherence to antiretroviral therapy and engagement in care

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Specific Aim 1

Community health assessment data from women in the Miami-Dade Ryan White Program in 2017

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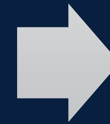
Develop profiles of WLH based on housing status

Identify characteristics associated with group membership



Assess the relationship between housing group membership and HIV care outcomes

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Methodology

- Administrative intake data, health assessment data & laboratory data
- 1,501 WLH (18+ years old) enrolled in the Miami-Dade County Ryan White Program during 2017
- Analytic strategy:
  - Latent class analysis to identify groups of women based on patterns of housing characteristics
  - Bivariate descriptive analysis & multinomial logistic regressions to identify characteristics associated with group membership and the impact of housing groups on HIV care outcomes

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Variables

Housing Variables used to generate latent classes

- Housing status (Homeless/ institutional housing [e.g. transitional, residential, health care, or correctional facilities], stably housed)
- Head of household situation (Female-headed, non-female headed)
- Living with minors (<18 years old) in the household
- Living with another adult(s) in the household
- Disclosure among adult(s) with whom they live

Sociodemographic and Behavioral Variables

- Age
- Race/ ethnicity
- US born
- Preferred language
- Federal poverty level (<100% FPL, ≥100% FPL)
- Employment
- Mental health (e.g. depression)
- Domestic violence/ abuse
- Substance misuse
- Transportation to appointments
- Receives or needs mental health services
- Problematic drug use (Has drug/ alcohol use resulted in any problem in daily activity, legal issue, or hazardous situation)
- Drug use affects adherence
- Would like substance use treatment now
- Has a support system

Outcome Variables

- Retained in care (engaged in HIV care at least twice within one year ≥3 months apart)
- Viral Suppression (having a viral load test of <200 copies/ml in the last laboratory test of the year)
- Sustained Viral Suppression (all viral load tests <200 copies/ml in the year)

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Sample Characteristics

Total sample:

- 1,501 WLH (18+ years old)
- 42% Non-Hispanic Black, 30% Hispanic, 25% Haitian, 3% Non-Hispanic White
- 58% foreign born
- 51% 50 years old or +
- 90% retained in care, 88% virally suppressed, and 77% sustained viral suppression

Results: Latent Profiles

(n= 1,501 women)

Class 1 **n= 805** (56%)	Class 2 **n= 655** (39%)	Class 3 **n=41**(5%)
• Consisted of primarily stably housed women • Majority non-female headed households • 30% having at least 1 minor in the household • All having another adult in the household • All having disclosed their HIV status to those with whom they live	•Consisted entirely of stably housed women •Majority female headed household •26.6% with at least 1 minor in the household •Majority with no other adult in the household •None with reported HIV disclosure to those with whom they live	• Consisted entirely of women who were homeless or unstably housed • Majority non-female headed households • Majority with no minors • No other adults • None with reported HIV disclosure to those with whom they live

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Results: Distribution of HIV care outcomes

Table 3: Distribution of Sociodemographic and Behavioral Characteristics by Class Membership among Women Living with HIV (Continued)

Characteristic	Total Sample (N = 1,501) n (%)	Class 1 (n = 805) n (%)	Class 2 (n = 655) n (%)	Class 3 (n = 41) n (%)	p
Retained in HIV care					.0009
No	147 (9.8)	73 (9.1)	63 (9.6)	11 (26.8)	
Yes	1,354 (90.2)	732 (90.9)	592 (90.4)	30 (73.2)	
Viral suppression					.0532
No	183 (12.2)	96 (11.9)	77 (11.8)	10 (24.4)	
Yes	1,318 (87.8)	709 (88.1)	578 (88.2)	31 (75.6)	
Sustained viral suppression					.0021
No	352 (23.5)	185 (23.0)	148 (22.6)	19 (46.3)	
Yes	1,149 (76.6)	620 (77.0)	507 (77.4)	22 (53.7)	

Note: FPL = federal poverty level.

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Class membership odds by sociodemographic & behavioral characteristics

[When compared to Class 1]

Women in Class 3
Significantly more likely: •Living with a household income <100% of the FPL • Reported receiving or needing mental health services •Reported needing substance use treatment now •Reported having no support system

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3 models to examine HIV care outcomes by class membership

Crude model

- Included class membership as a predictor

Sociodemographic model

•Included class membership as a predictor while controlling for demographic variables [Including: age, race/ ethnicity, US nativity, preferred language, federal poverty level, employment, and access to transportation]

Full model

- Includes class membership as a predictor while controlling for sociodemographic and behavioral variables [Including: age, race/ ethnicity, US nativity, preferred language, federal poverty level, employment, access to transportation, receives or needs mental health services, feeling depression or anxious, ever experience domestic violence, support system, problematic drug use, drug use affect adherence, and would like substance use treatment now]

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Results: HIV care outcomes by class membership

- **Crude model:** Women in Class 3 had significantly lower odds of having successful outcomes on all 3 measures: *being retained in care, being viral suppressed, and having sustained viral suppression.*
- **Sociodemographic model:** Women in Class 3 continued having significantly lower odds of being *retained in care and having sustained viral suppression.*
- **Full model:** Women in class 3 persisted to have significantly lower odds of being *retained in care.*

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HIV care outcomes by class membership

	Crude Model[1]		Sociodemographic Model[2]		Full Model[3]	
	Class 2 vs. Class 1 OR (CI)	Class 3 vs. Class 1 OR (CI)	Class 2 vs. class 1 aOR (CI)	Class 3 vs. Class 1 aOR (CI)	Class 2 vs. Class 1 aOR (CI)	Class 3 vs. Class 1 aOR (CI)
Retained in care	0.94 (0.66- 1.34)	**0.27 (0.13-0.57)**	0.79 (0.55- 1.14)	**0.30 (0.14- 0.63)**	0.79 (0.55- 1.15)	**0.33 (0.14- 0.76)**
Viral Suppression	1.02 (0.74- 1.40)	**0.42 (0.20- 0.88)**	0.87 (0.62- 1.21)	0.51 (0.23- 1.11)	0.84 (0.60- 1.18)	0.70 (0.30- 1.66)
Sustained Viral Suppression	1.02 (0.80- 1.31)	**0.35 (0.18- 0.65)**	0.87 (0.67- 1.21)	**0.48 (0.25- 0.94)**	0.85 (0.66- 1.11)	0.61 (0.30- 1.26)

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Conclusions

- Class 3 (Unstably housed women who live alone, with no minors, no other adults, and no reported disclosure of their HIV status): at increased risk of poor HIV care outcomes
- Critical need of targeted services to increase retention in care; significantly more likely to experience disengagement
- WLH with household income < 100% FPL, reported receiving or needing mental health services, reported needing substance use treatment, and reported having no support system are more likely to experience these housing situations
- Behavioral risk factors may account for the differences in viral suppression and sustained viral suppression outcomes

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Fernandez, S.B., et al. https://doi.org/10.1093/swr/svac015

Limitations

- Sample did not include WLH who were not engaged in care
- Data were self-reported and did not utilize validated measurements of substance use or mental health; could have resulted in underreporting
- Cross sectional study
- Crude measure of housing instability (e.g., living in transitional, residential, healthcare, or correctional facilities)
    - Did not include all factors in understanding housing instability

Specific Aim 2

Qualitative interviews with WLH who are linked to care and report experiencing homelessness or housing instability in the past 12 months

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Methodology

- Objective: Qualitative interviews to explore adhere to antiretroviral medication and retention in care
- Recruitment: via medical case management agencies providing services to WLH in Miami-Dade August 2020 – March 2021
- Eligibility:
  - WLH, 18+ years of age
  - Fluent in either English or Spanish
  - Able to provide electronic informed consent
  - Self-reported experiences of housing instability over past 12 months determined by any experiences of literal homeless, imminent risk of homelessness, or precariously housed (DHHS, 2009).
- Analysis: Thematic analysis with 2 independent coders using Nvivo 11 software

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Interview Protocol

Semi-structured interview guide designed to explore experiences of housing instability and its impact on adherence to medication and engagement in care

- Housing situations
- Household composition
- Interpersonal household relationships
- Neighborhood environments
- Intrapersonal aspects

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Results: Demographics

	N= 16 No. (%)
Age, mean (SD)	**48 (8.78)**
US Born	**12 (75)**
Hispanic/ Latinx	**5 (31.3)**
Race	
Black/ African American	**11 (68.8)**
White	**4 (25)**
Prefer not to answer	**1 (6.3)**
Living situation	
In your own house/apartment	**7 (43.8)**
At your parent's house	**1 (6.3)**
Someone else's house/apartment	**4 (25)**
Residential drug, alcohol treatment facility, or halfway house	**2 (12.5)**
(SRO) Rooming House	**1 (6.3)**
How long have you stayed at the place you stayed last night?	
Less than a week	**1 (6.3)**
More than 1 week but less than 1 month	**1 (6.3)**
1 – 3 months	**4 (25)**
More than 3 months but less than 6 months	**9 (56.3)**
More than 6 months	**1 (6.3)**

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Themes I

- Storing and misplacing medication
  - Disruption of daily routines
- Privacy and stigma-related issues
  - Conflict
  - Distrust
- Inconsistent access to medication and health care utilization

Competing and unmet physical and mental health needs:

- Chronic Stress
- Depression & Isolation
- Drug use
- Experiences of violence and abuse
- Trauma
- Food

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Table 1. Selected key themes with sample quotes

Theme	Sample Quotes
Disruption of daily routine impacting care	*“When I was out in the street, it was hard because I didn’t know the time; when I was supposed to take it. Somedays I miss days without taking my medication but I still took it whenever I thought about it so I feel like I was basically keeping up with myself just by taking it, like any little bit counts, basically. I had to do what I had to do.”*
Privacy issues impacting care	*“I keep my medication hidden. I don’t leave it in my pocket for whatever reason. Probably because I feel like if someone uses my bathroom, you know a lot of people that use medication, do know what they are for. And that’s not for everyone to know depending on the knowledge of the person... I just don’t leave it around. So, sometimes that results in me misplacing.”*

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Themes II

- Facilitators
  - Resiliency
  - Survival skills
  - Social support /connectedness
  - Spirituality
  - Seeking services for unmet needs

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Conclusions

- Highlighted realities of storing, hiding, missing, and doubling up on medications
- Stigma and privacy were intertwined throughout themes
- Need strategies that are responsive to the disruption of routines and are sensitive to privacy issues in shared dwelling spaces
- Highlighted need for identification and treatment of competing physical and mental health conditions
  - E.g., Substance use, lack of food

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Fernandez, S.B, et al.. https://doi.org/10.3390/ijerph191811484

Limitations

- Small sample; recruited from HIV medical case management agencies; currently engaged in HIV care
- Leaving out the perspectives of those who were potentially experiencing more or different challenges
- Qualitative interviews not meant to yield generalizable results to all RWP clients who are women

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Implications II

- Integrated care for WLH that includes mental and behavioral health care
  - Inquiry of behavioral and environmental considerations when prescribing ART
- Emphasis on screen for housing instability once in care to prevent disengagement in care
- Strategies that are responsive to disruption of routines, inconsistent access to medication and care, & privacy issues in shared dwelling spaces
- Need local & federal resources to address housing crisis to minimize homelessness and adverse consequences associated with poverty
  - HOPWA, investments in affordable housing, housing subsidies and vouchers, other forms of economic/ welfare services (e.g., SSDI, Supplemental Nutrition Assistance Program (SNAP), other low-income emergency assistance).
- Utilizing and enhancing facilitators (resilience, social connectedness, access to necessary services)

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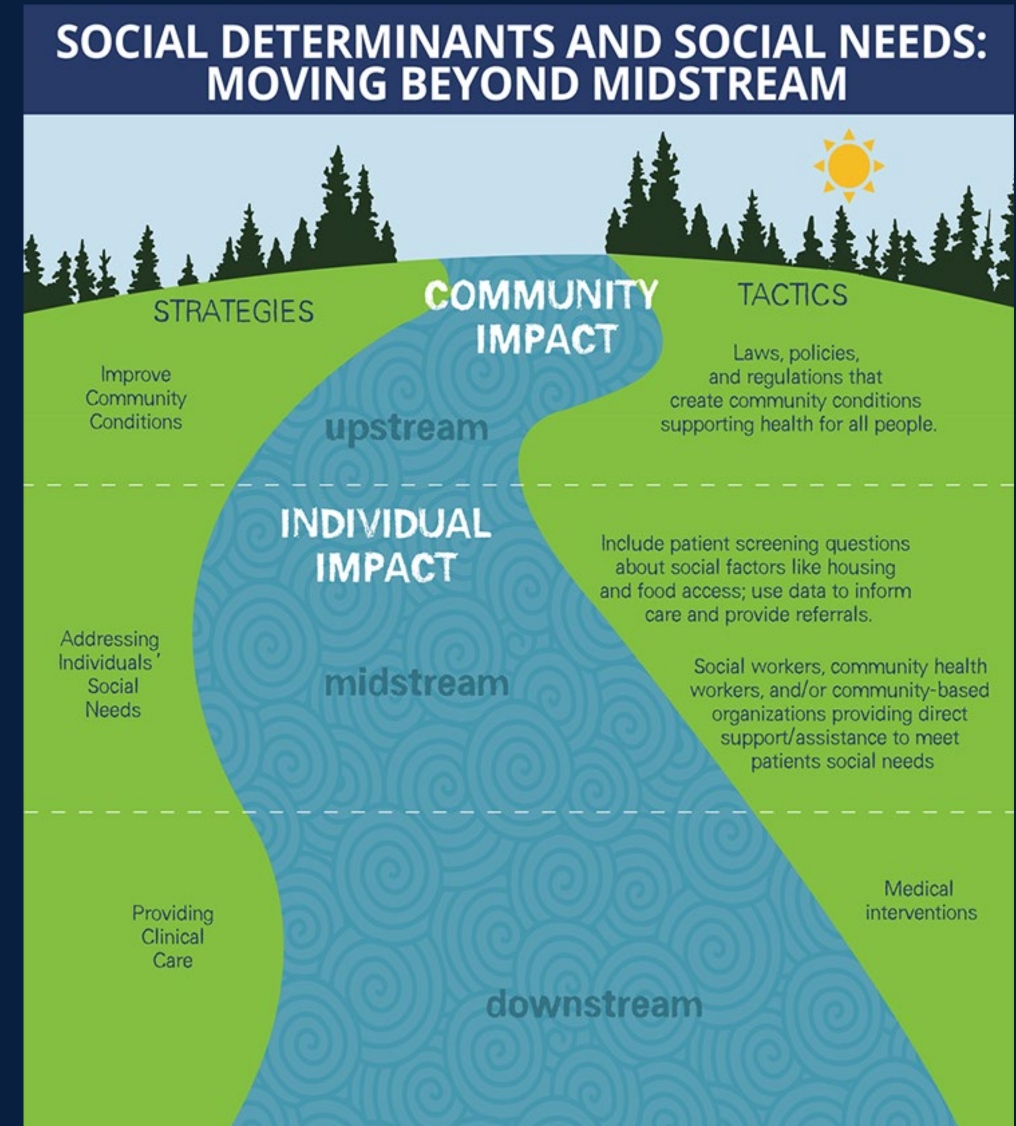
Implications II

- Incorporating the voices of those with lived experience
- Continued inclusion of hard-to-reach populations in research
- Understanding continuity of prevention and treatment barriers to eliminate underlying mechanisms of disparities
    - Advancing cultural & *structural* competency



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Questions for discussion

- Do these results resonate with your own experiences?
- What are additional important implications to consider when providing services to WLH at risk of homelessness and housing instability?
- What questions and other comments do you have?

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Acknowledgements

This work is supported by Award Number R01MD013563, and in part by Awards U54MD012393 from the National Institute on Minority Health and Health Disparities at the National Institutes of Health. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institute on Minority Health and Health Disparities or the National Institutes of Health.

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Acknowledgements

- **Clients who graciously shared their experiences and expertise with us**
- Collaborators, co-authors, and mentors
  - Women-Centered Care FIU HIV Research Team
  - Behavioral Science Research Corporation Team
  - Ryan White Program Administrators and the entire Ryan White Part A Program in the Miami-Dade County Office of Management and Budget

Thank you!

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