Migration, Housing Insecurity, and HIV among Sexual Minority Men in the US

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Introduction

Sexual minority men (SMM) encounter substantial mental, behavioral and physical health disparities (1,2), health risk factors, and unequal barriers to healthcare (3,4). Additionally, the proportion of individuals who self-identify as lesbian, gay, bisexual or transgender in the U.S. has increased significantly over the past ten years, and is now at 7.2% (5). Black and Latinx SMM, as well as sexual minority immigrants face elevated risk for disparately negative personal and public health outcomes (6–8), yet remain severely underserved. In order to reduce health disparities of sexual minority populations, we must address upstream fundamental causes of health in a spatially-explicit manner. Foundational research on spatial demography and geo-social determinants of health for sexual minorities is still limited in part due to data limitations (9,10) and a historical focus on sexual health (11). Indeed, Healthy People 2030 has specific objectives to increase and improve data collection on sexual minority populations (Objective LGBT-01) (12), with a focus on social determinants of health.

Our work is centered around social and spatial characteristics of SMM who experience housing insecurity. Housing security is increasingly recognized as a priority for public health (12). Housing insecurity is predictive of poor self-rated health among SMM (13) as well as a number of other health outcomes such as mental health and heart disease (14–16). The severity and consequences of housing insecurity on poor health varies by space and place (17,18). Sexual minority populations experience housing insecurity at rates higher than heterosexual populations (19), but little research has looked into the patterns and drivers of housing insecurity among SMM (20).

Using multiple years of the American Men's Internet Survey (AMIS), we describe and characterize spatial patterns of housing insecurity among sexual minority men (SMM), assess whether HIV and migration status predict housing insecurity, and examine whether the relationships varies across space in U.S. We hypothesize that both HIV status and migration will be positively associated with housing insecurity. Migration may be associated with less social capital and more sparse social networks. People living with HIV may also have more housing insecurity, since living with HIV can cause instability.

Conceptual framework

The Sexual and Gender Minority Health Disparities framework seeks to highlight the complex interplay of individual, interpersonal, community and societal factors that impact the health and well-being of SGM; thus, we use this model to conceptualize how key individual, interpersonal, and societal variables may affect housing insecurity. Key individual variables include race/ethnicity, immigrant status, migrant (defined as born in a state different than current residence), and education.

Next, we rely on the minority stress theory to conceptualize how housing insecurity can lead to health disparities (21). Minority stress theory argues that stigmatization leads to heightened stress levels among sexual and gender minority populations (21–24), suggesting a pathway from stigma to morbidity. The individual may internalize homophobia, perceive stigma toward themselves, or experience actual incidences of discrimination (21,23–26). The increased stress from these experiences is linked to increased frequency of psychiatric disorders (e.g. anxiety and depression), deleterious behaviors (e.g. substance use, drinking, and smoking), and poorer perceptions of personal health (27–29). Furthermore, psychological stress in general is associated with poorer cardiovascular health outcomes (30), and sociological research emphasizes that differential exposure to stress leads to worse physical and mental

health outcomes for marginalized groups (31). We hypothesize the housing insecurity is another pathway in which sexual minority men may experience added stressors, and thus por health.

Data & Methods

We (currently) to four cycles of the American Men's Internet Survey (AMIS) from 2018-2021 (n = 40, 893) to examine spatial demography and housing insecurity among SMM. AMIS is an annual cross-sectional online HIV behavioral survey of SMM in the U.S. The survey is conducted in annual cycles with a goal of at least 10,000 complete surveys each year. AMIS has occurred annually since 2013, and has recruited more than 100,000 surveys. In addition to a number of questions about HIV treatment and prevention, the online survey consists of a core questionnaire, including questions in the following domains: demographics, place of birth, current residence, foreign born status (and time in the U.S.), housing insecurity and homelessness, mental health, stigma and social support. Table 1 describes key variables from our preliminary data, which has so far been limited to state-level geographies and years 2018 – 2021. (Adding additional years and using a finer spatial scale is work in progress.)

The key dependent variable is housing insecurity; key independent variables include migration (born different state), and HIV status.

Table 1: Socio-demographic and housing characteristics of the AMIS sample, years 2018-2021

		n	%
Race/ethnicity			
	Black, non-Hispanic	4,936	11.82
	Hispanic	6,941	16.63
	White, non-Hispanic	26,522	63.53
	Other or multiple races	3,221	7.72
Education attainment (highest)			
	< HS diploma	1,881	4.46
	HS diploma or equivalent	6,347	15.06
	Some college or technical degree	14,048	33.33
	College degree or higher	19,870	47.15
Foreign born			
	yes	3,441	8.11
	no	38,960	91.89
Migrant (born in different state)			
	yes	11,040	38.13
	no	17,913	61.87
In the past 12 months, ever homeless?			
	yes	1442	3.51
	no	39532	96.24
	DK, refuse	102	0.25
In the past 12 months, experience housing insecurity?			
	yes	3374	8.2
	no	37519	91.22
	DK, refuse	237	0.57
Year of survey			
	2018	10,129	23.89
	2019	10,130	23.89
	2020	13,081	30.85
	2021	9,061	21.37

Preliminary Results

On average, 8.2% of the respondents reported experiencing housing insecurity in the past 12 months. Just under 9% had ever been diagnosed with HIV, and 38% reported living in a state different than the one in which they were born.

In pooled models with state fixed effects and no additional control variables, SMM who were migrants (i.e., living in a different state than birth) were less likely to report experiencing housing insecurity (OR = 0.77, 95%CI: 0.70 – 0.84). This association also varied by state, with the lowest odds rations seen in the West Coast (WA, OR, CA), Arizona, Michigan, Maryland and Connecticut when the models were stratified by state. However, being a migrant living in Wisconsin, Oklahoma, North Dakota, Mississippi, Maine and Indiana was associated with higher rates of housing insecurity. (See Figure 1).

In pooled models with state fixed effects and no additional control variables, SMM living with HIV were more likely to report experiencing housing insecurity (OR = 1.42, 95%CI: 1.28 – 1.60). This relationship varied over space as well. The highest odds ratios were seen in Rhode Island, Utah and Puerto Rico. (See Figure 2).

In pooled multiple regression models, controlling for age, race and ethnicity, education, and state fixed effects, migrant status no longer was associated with housing insecurity. However, HIV status continued to be positively associated with housing insecurity (OR = 1.71, 95%CI: 1.45 – 2.02). All race and ethnicity categories were associated with higher levels of housing insecurity, compared to non-Hispanic white individuals, and lower levels of education were associated with higher levels of housing

insecurity (See Table 2). State-specific odds ratios varied as well, with higher odds seen in states in the middle of the country.

	OR	95% CI
Migrant	1.01	0.92-1.11
HIV status	1.71	1.45-2.02
Year (ref 2018)		
2019	1.15	1.03-1.29
2020	1.10	0.98-1.23
Age (years	0.97	0.97-0.98
Race (ref NH white)		
NH Black	1.78	1.55-2.02
Hispanic	1.28	1.13-1.45
Other, multiple	1.50	1.28-1.75
Education (ref college+)		
<HS diploma	3.04	2.53-3.66
HS or equivalent	2.73	2.40-3.13
Some college	2.17	1.93-2.44

Table 2: Results of a multivariate logistic regression model, with state fixed effects, predicting the odds of housing insecurity

Discussion and Conclusions

Rates of housing insecurity are high among SMM in the U.S., and significantly vary by state. HIV status is positively associated with housing insecurity, and also varied by state. This affect stayed significant even when controlling for additional covariates. Contrary to our hypotheses, migrant men in this study are less likely to experience housing insecurity. However, this relationship was no longer significant once other covariates were included in the model, notably with the addition of education. One explanation could be that many migrants in the sample are highly educated, especially if the reason for migration was due to obtaining higher levels of education such as attending college in a different state. Lower levels of education are strongly associated with higher rates of housing insecurity.

Future work will use additional years of survey data, and we are working on acquiring data at a finer spatial. Spatial approaches to improving health of minoritized populations is critical since social and structural determinants of health vary by space and have differential impacts on health outcomes in different contexts. Future work will examine some mechanisms that could drive these relationships.

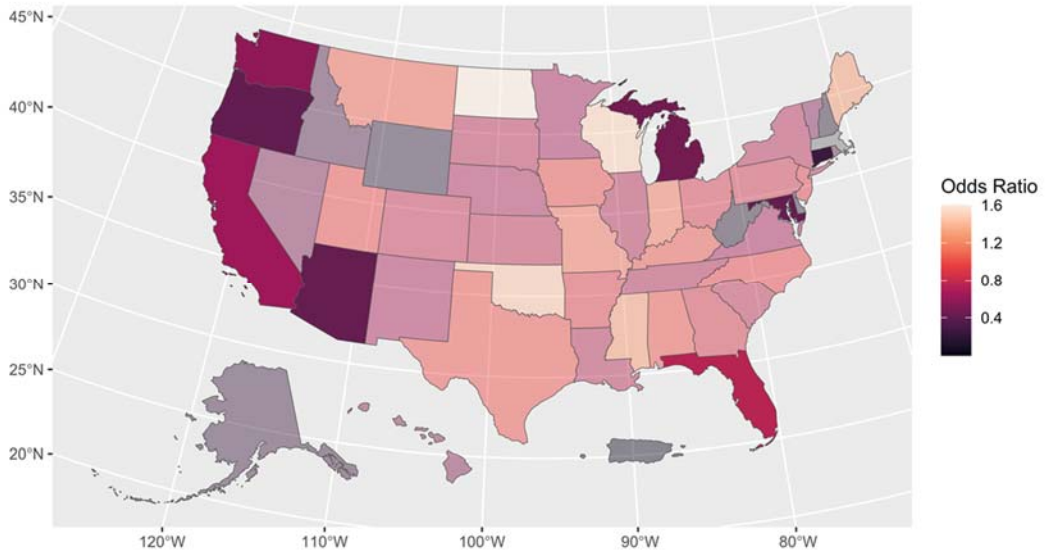

Figure 1: State-specific model, depicting the relationship between migrant status and housing insecurity

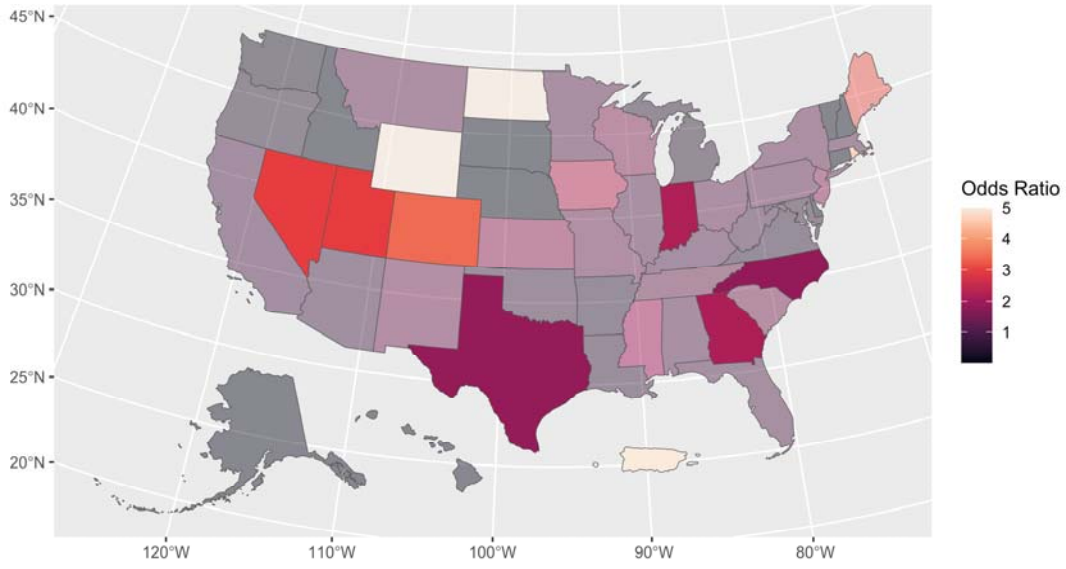

Figure 2: State-specific model, depicting the relationship between HIV status and housing insecurity

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