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Income Inequality, HIV Stigma and Preventing HIV Disease Progression in Rural Communities

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Abstract

Antiretroviral therapies (ART) suppress HIV replication, thereby preventing HIV disease progression and potentially preventing HIV transmission. However, there remain significant health disparities among people living with HIV, particularly for women living in impoverished rural areas. A significant contributing factor to HIV-related disparities is stigma. And yet, the relative contributions of stigma, gender, socio-economics, and geography in relation to health outcomes are understudied. We examined the associations of internalized stigma and enacted stigma with community-level income inequality and HIV viral suppression -- the hallmark of successful ART -- among 124 men and 74 women receiving care from a publicly funded HIV clinic serving rural areas with high-HIV prevalence in the southeastern US. Participants provided informed consent, completed computerized interviews and provided access to their medical records. Gini Index was collected at the census tract-level to estimate community-level income inequality. Individual-level and multilevel models controlled for point-distance that patients lived from the clinic and quality of life, and included participant gender as a moderator. We found that for women, income inequality, internalized stigma, and enacted stigma were significantly associated with HIV suppression. For men there were no significant associations between viral suppression and model variables. The null findings for men are consistent with gender-based health disparities and suggest the need for gender-tailored prevention interventions to improve the health of people living with HIV in rural areas. Results confirm and help to explain previous research on the impact of HIV stigma and income inequality among people living with HIV in rural settings.

Keywords

HIV Stigma; Health Disparities; Rural Health; HIV Treatment

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Advances in antiretroviral therapies (ART) prevent disease progression and forward transmission of HIV infection. Despite the transformation of HIV from a universally life-threatening disease to a manageable chronic illness, HIV-related stigmas persist. Stigma impacts every point along the HIV continuum of care to propagate HIV infection (Sweeney & Vanable, 2016; Turan et al., 2017). However, HIV-related stigma is not evenly distributed across geographic regions and experiences with stigma vary among subgroups. For example, HIV-related stigma experiences are more prevalent among people living with HIV in the southeastern US relative to other regions (Kerr et al., 2014). In terms of population subgroups, studies show that women living with HIV in the southeast who experience stigma are at greater risk for depression (Darlington & Hutson, 2017), are less likely to seek medical care (Wingood et al., 2007), have poorer HIV treatment adherence and poorer retention in care (Sangaramoorthy, Jamison, & Dyer, 2017). And while the geographic dispersion of stigma likely affects persons living with HIV regardless of gender, few studies have examined women and men in comparative analyses.

The impact of HIV-related stigma on HIV disease progression and risks for HIV transmission also varies between rural and urban settings (Pellowski, 2013). As many as half of Americans living with HIV in the southern US reside outside of metropolitan areas, places where HIV support services are nearly nonexistent. People living with HIV in rural areas face significant challenges to HIV treatment retention and adherence, which are necessary for the protective and preventive benefits of ART. Studies show that HIV stigmas are experienced to a greater degree in rural areas relative to urban and suburban communities (Gonzalez, Miller, Solomon, Bunn, & Cassidy, 2009; Kalichman, Katner, Banas, & Kalichman, 2017). In a study conducted in the northeastern US, Gonzalez et al. (2009) found that people in rural areas were less open about their HIV status, perceived more negative attitudes toward them, held more negative self-images, and had experienced more enacted stigma (i.e., discrimination). In rural communities, HIV stigmas also interfere with access to transportation, raise concerns about confidentiality and inhibit talking openly with health care providers (Pellowski, 2013). A study of men and women living with HIV in north and central Georgia demonstrated that individuals living in rural communities experience greater internalized stigma compared to urban areas, and that people living with HIV in suburban areas experience greater enacted stigma than those in urban areas. The study findings suggested that people living in rural and peri-urban settings experience greater internalized stigma and enacted stigma than their counterparts living in large-urban centers (Kalichman et al., 2017). Because the adverse effects of stigma on ART uptake and adherence appear more pronounced in rural settings, greater disease progression and forward transmission of HIV is likely in stigmatized rural areas.

The association between HIV stigma and health disparities occurs within the context of income inequality (Walcott, Kempf, Merlin, & Turan, 2016). In fact, income inequality is structurally linked to disparities in private and public health services at the individual (Lynch, Smith, Kaplan, & House, 2000; Wolfson, Kaplan, Lynch, Ross, & Backlund, 2000), community (Kim & Kim, 2017; Kim, 2017) and national levels (Lynch et al., 2001; Wilkinson & Pickett, 2006). Disparities in income, social capital, and health outcomes are also observed among people living with HIV (Holtgrave & Crosby, 2003). HIV-related stigmas appear to contribute to health disparities by impeding access to care, interfering with adherence and retention in care, and contributing to emotional distress of people living with HIV (Katz et al., 2013; Mitzel et al., 2015; Sweeney & Vanable, 2016). Previous studies have therefore shown a link between income inequality and HIV stigma in relation to preventing adverse health outcomes in people living with HIV (Rueda et al., 2016).

The current study examined the associations of income inequality and HIV stigma in relation to HIV viral suppression in men and women living with HIV in a rural community in the southeastern US. We specifically focused on the HIV suppression as the outcome because it is the marker for preventing disease progression and forms the fundamental basis for preventing the forward transmission of HIV infection. We tested the hypothesis that HIV-related stigma and community-level income inequality would be independently associated with HIV viral suppression. In addition, to better inform prevention interventions, we tested individual and community-level models separately for men and women. HIV-related stigma was conceptualized as two dimensions: (a) internalized stigma – reflecting a sense of being less worthy or inferior to others due to having HIV and (b) enacted stigma -- representing experiences of prejudice and discrimination. Our models simultaneously tested internalized and enacted stigma as impediments to HIV suppression.

Methods

Setting and Participants

The study was conducted at a publicly funded HIV clinic in central Georgia. More than 65% of people living with HIV in rural areas of the US are in southern states and more than half of Georgia's residents living with HIV reside outside of major metropolitan areas (CDC, 2016b). The 13-county area served by the participating clinic has a poverty rate of 26% and an unemployment rate of 18%, more than double that of the state. The clinic is located in central Georgia in a census tract with moderate income inequality, Gini =.45. Study participants were 124 men and 74 women receiving health services at the clinic during the period between February and April, 2016. Patients were eligible if age 18 years or older and receiving HIV care services from the clinic.

Procedures

Participants were recruited through targeted convenience sampling. During a scheduled office visit, a total of 257 patients were invited to complete the survey while waiting for their clinical appointment and 198 (77%) agreed. After providing informed consent, participants completed an audio-computer assisted self-interview to collect demographic and health characteristics and measures of internalized stigma and enacted stigma and quality of life. Participants consented to allow the researchers to retrieve their electronic medical records and access their residential addresses and medical information pertaining to HIV-specific health status [e.g., HIV suppression (viral load) and CD4 cell counts]. Participants were compensated for completing study measures with a $15 cash (ATM) card. The university Institutional Review Boards approved all procedures.

Measures

Data were collected through three sources: audio-computer administered self-interviews (ACASI), clinical medical records, and income inequality at the census tract level for participant's residence (geolocation). Each measure is described below.

Computerized interviews—The ACASI included an assessment of participant demographic characteristics (i.e., gender, age, years of education, ethnicity, access to food/food security, and employment status) used to describe the sample. To assess HIV treatment adherence, and also used to describe the sample, we administered a standard rating scale, known as the Visual Analogue Scale (Giordano, Guzman, Clark, Charlebois, & Bangsberg, 2004), which asks individuals to indicate the point along a continuum showing how much of their ART they have taken in the past month. For computerized administration we adapted the response format for the Visual Analogue Scale by using a 100-point slide bar tool anchored by 0%, 50% and 100%. The adherence rating scale used in this study has been demonstrated reliable and valid including concordance with adherence obtained by unannounced pill counts, electronic medication monitoring, and HIV viral load (Finitsis, Pellowski, Huedo-Medina, Fox, & Kalichman, 2016).

Health-related quality of life.—We assessed health-related quality of life to control for functional health status as a potential confound with HIV suppression, a five-item scale drawn from the CDC Behavioral Risk Factor Surveillance Survey (CDC, 2016a). Items asked participants to rate their overall health and to indicate the number of days in the past month when: their physical health was not good; activity was limited as a result of physical health; pain was present; and their health was good. Each item was rated on 6-point scales representing number of days in the past month. Scores range from 5 to 30, alpha = .80.

Internalized Stigma and Enacted Stigma.—Internalized and enacted stigma were assessed as the independent variables in this study by adapting the HIV Stigma Mechanisms Scale (Earnshaw & Chaudoir, 2009; Earnshaw, Smith, Chaudoir, Amico, & Copenhaver, 2013). The internalized stigma subscale (6 items) assesses an individual's sense of worth in relation to living with HIV. Participants responded to items assessing their negative feelings about living with HIV (e.g., I feel ashamed about having HIV) on 4-point scales, 1 = Strongly disagree to 4= Strongly agree, with scores ranging from 6 to 24 and higher scores indicating greater internalized stigma (alpha = .91). We also assessed experiences of enacted HIV stigma (perceived discrimination) using 20 items adapted from the Stigma Mechanisms Scale (Earnshaw et al., 2013), the HIV Stigma Scale (Berger, Ferrans, & Lashley, 2001), and the Multiple Discrimination Scale – HIV version (Bogart, Elliott, et al., 2013; Bogart, Landrine, Galvan, Wagner, & Klein, 2013). Participants were asked to indicate whether they have experienced each form of discrimination in the past year due to their HIV-positive status and a composite scale was calculated across the 20 items, scores ranged from 0 to 20, alpha = .94.

Health Status

Lab reports dated most proximal to completing measures and were abstracted from electronic medical records. Specifically, we collected the absolute CD4 cell count, the

CD4/CD8 ratio, and HIV viral load. Both CD4 count and CD4/CD8 ratio are clinical markers of immune system function used to describe the immunological health of the sample. CD4 counts under 500 indicate immune system impairment and values under 200 are diagnostic for AIDS. CD4/CD8 values under 1 indicate immune system impairment, with values approaching 0 signifying greater impairment. The dependent variable in our models was HIV viral load, measured in number of HIV RNA copies per mL of blood. We defined viral suppression (undetectable/detectable viral load) as 100 RNA copies to avoid misinterpreting 'blips' as unsuppressed virus (Crepaz et al., 2016).

Geolocation and income inequality

Participant residential address was collected from medical records to calculate the distance that participants live from the HIV clinic. This variable was used as a control for degree of rurality, a potential confound with HIV stigma. To calculate distance, we first used the geocoding function in Google Earth to obtain the geographical coordinates for each patient residence and the HIV clinic. Then, we used the Point Distance tool within the ArcMap software to calculate the distance between points: residence and clinic. The distance measure does not represent travel-time or road access. Rather, the point distance measure represents linear distance between participant residence and the clinic that serves as a hub for their health and social services. Participant locations and their geo-dispersion are also examined with reference to HIV suppression and stigma. The participant-clinic distance measure was included in the models to control for access to services as well as confounding rurality with stigma.

The Gini index (e.g., Gini ratio or coefficient) was used to estimate geolocated income inequality. The Gini index represents income or wealth distribution among residents within a geographical location, in this case census tracts. This variable is commonly used as a factor in predicting health outcomes, such as sexually transmitted infections, including HIV infection (Chesson, Patel, Gift, & Aral, 2016; Nikolopoulos et al., 2015). Gini coefficients were collected from https://www.nhgis.org/ at the level of census tracts for the years 2010–2014 (Minnesota Population Center, 2016). Census tracts were specified to match participant residences. Gini coefficients were spatially joined to patient data using ArcMap software, where Gini values were assigned to participants for individual-level analyses and retained for census tract for community-level models. Gini coefficients range from 0–1, with values of greater income inequality approaching 1.

Data analyses

Our analyses concentrated on testing the associations of detectable/undetectable viral loads with income inequality and stigma scores. We conducted both individual-level and community-level (census tract) models. For individual-level analyses, we first describe the sample partitioned by gender; comparisons between men and women on demographic and health characteristics used t-tests for continuous measures and chi-square contingency table analyses for categorical variables. We also examined the Pearson correlations among variables at the individual-level separately for men and women. For individual-level models, we conducted multivariable logistic regressions with the dependent variable of viral load [undetectable (< 100 RNA copies) and detectable (> 100 RNA copies)] related to Gini index, internalized stigma, and enacted stigma. The models controlled for possible confounding of participant distance from the clinic and health-related quality of life. We centered all continuous variables at their means to aid in interpretation of the interactions with gender. For community-level models, we tested the same model as the individual-level analysis using generalized estimating equations (GEE) to adjust for interdependence within census tracks. We also included interactions between gender and all other effects in the models. When examining interactions with gender, in our simple effect tests, we recoded gender of interest to zero so that other effects in the model refer to that gender. The GEE models specified a binomial distribution with a logit function. We report Wald's X^2 as the test of statistical significance in the adjusted models. All analyses used SPSS v.24 and defined statistical significance as $p < .05$.

Results

Table 1 shows the characteristics of 124 men and 74 women receiving HIV health services. The sample was 83% African American and the average age was 45 years. Participants were diagnosed with HIV infection for an average of 13 years. In terms of current health status, 13% of the sample showed evidence of advanced HIV disease with CD4 counts under 200, an average CD4/CD8 ratio of .67, and 28% had detectable HIV viral loads. Both men and women indicated high-rates of poverty markers, including lack of transportation and food insecurity. Participants lived an average of 9 miles from the clinic, with a range of less than one mile to more than 50 miles from the clinic. There were no differences between men and women on any demographic or heath characteristics.

Individual-level models of HIV suppression

Table 2 presents the bivariate correlations partitioned by gender for Gini index, HIV viral load, internalized stigma and enacted stigma, quality of life, and distance participants lived from the clinic. For men, shown in the upper panel, distance to the clinic was significantly associated with income inequality; men living further from the clinic lived in areas of lower income inequality. None of the model variables were significantly associated with men's HIV viral load. For men, results of the multivariable logistic regression for HIV viral load were consistent with the bivariate associations; neither income inequality nor the stigma variables were associated with men's HIV viral load (see Table 3). The lack of association between income inequality and internalized stigma is apparent, as is the lack of association of HIV viral load to either income inequality or internalized stigma.

Similar to men, women who lived further from the clinic also lived in areas of significantly lower income inequality. However, in contrast to men, bivariate correlations indicated that women who lived further from the clinic experienced significantly poorer quality of life and significantly greater internalized stigma and enacted stigma (see Table 2, lower panel). Women's viral loads were also associated with income inequality and enacted stigma; women living in areas of greater income inequality and experiencing less enacted stigma had significantly higher viral loads. Results of the multivariable logistic regression indicated that women with detectable viral loads lived in areas of greater income inequality, experienced significantly greater internalized stigma, and significantly less enacted stigma.

Multilevel models of HIV suppression

Generalized Estimating Equations (GEE) were used to account for non-independence in data from participants in the same community (census tract). These models indicated that there was a significant main effect of income inequality at the community-level on HIV viral load; greater income inequality was significantly associated with higher likelihood of detectable viral load. Viral load was also significantly associated with internalized stigma and enacted stigma, but in opposite directions; greater internalized stigma was significantly associated with greater likelihood of having a detectable viral load, whereas experiencing greater enacted stigma was related to significantly less likelihood of detectable viral load. There was also a marginally significant interaction between income inequality and gender on HIV viral load. Men showed no relationship between income inequality and viral load. In contrast, women demonstrated a significant, positive relationship between income inequality and viral load; women living in areas of greater income inequality were significantly more likely to have detectable viral loads.

Discussion

More than one in four men and women receiving care from a clinic serving a small city and rural area of a southern US state had unsuppressed HIV, placing them at risk for advancing HIV disease and forward transmission of HIV to others. These rates of detectable viral loads are consistent with what has become known as the HIV treatment cascade, where one-in-five people living with HIV and treated with ART in the US have detectable HIV viral loads (Gardner, McLees, Steiner, Del Rio, & Burman, 2011), as well as estimates from the CDC that one-in-three people receiving ART in clinical care do not demonstrate durable HIV suppression (Crepaz et al., 2016; Marks et al., 2015; Marks et al., 2016). Our participants were similar to those in other studies in terms of indicators of poverty, with one in five being unemployed and more than half having a history of incarceration. Structural barriers to receiving HIV care were also frequently reported, with 12% of participants having missed a medical appointment in the previous month due to lack of transportation and one in four participants reporting being unable to buy food. Comparisons between men and women did not indicate significant differences on any demographic or health characteristic. For both men and women, the association between distance from the clinic was inversely related to Gini scores; income inequality was greater in the less rural areas. For men, no other factors were correlated with income inequality or distance from the clinic. For women, however, residing further from the clinic, more rural areas, was related to poorer quality of life, greater internalized stigma and less experienced enacted stigma.

Individual-level modeling showed that among women receiving ART, unsuppressed HIV was associated with residing in greater income inequality. In addition, women’s viral loads were related to both internalized and enacted stigma, although in opposite directions; experiencing more internalized stigma followed the expected pattern of greater stigma related to greater unsuppressed HIV. However, women who reported experiencing more enacted stigma demonstrate the opposite pattern; greater stigma was related to less unsuppressed HIV. Interpreting these findings in the context of geolocation, women living closer to the clinic would be expected to experience fewer transportation barriers and therefore better retention in care. However, we observed poorer outcomes for women closer to the clinic, potentially explained by barriers associated with income inequality, and HIV stigma, as well as other unmeasured factors.

Multilevel modeling for the entire sample showed that income inequality was significantly related to viral load; living in an area of greater income inequality was associated with greater unsuppressed HIV. In addition, the main effects for internalized stigma and enacted stigma in relation to HIV suppression were significant, but again in opposite directions; greater internalized stigma and less enacted stigma were associated with greater unsuppressed HIV. While there were no significant relationships in the multilevel model for any factors and viral load among men. However, the Gini index, internalized stigma, and enacted stigma were all significantly related to women's viral loads in the same directions found in the individual-level models. That is, internalized and enacted stigma were related to viral load in opposite directions reflecting the fundamental differences between multiple dimensions of stigma. Conceptually, internalized stigma reflects a sense of being less worthy or inferior to others due to having HIV and is directly connected to depression, including a sense of helplessness and denial of one's diagnosis (Earnshaw et al., 2013). Internalized stigma also reflects more durable impacts of stigma experiences that extend back beyond one year. On the other hand, enacted stigma represents recent experiences of prejudice and discrimination, which have the potential for building resilience (Perez-Brumer et al., 2017). Internalized and enacted stigma are associated, but they are not the same. Our results reinforce considering HIV stigma as multidimensional and treating it otherwise may likely lead to faulty conclusions. With respect to income inequality, our findings are consistent with research showing the adverse effects of income inequality on women's health (Vlassoff, 2007). We conclude that income inequality impacts the health of women living with HIV after accounting for proximity to the clinic and less recent enacted stigma experiences. Our findings, however, should be considered tentatively given the relatively small sample size and non-significant interactions between key factors and gender.

Results of the current study should be interpreted in light of its methodological limitations. We sampled participants receiving care from a publicly funded HIV care provider and our sample was one of convenience. Thus, our sample cannot be considered representative of people living with HIV. In addition, the study was conducted in just one state in the southeastern US, and is therefore geographically constrained. We specifically focused on individuals living with HIV in rural settings, which are known to differ from urban areas along multiple HIV care, stigma, and social economic dimensions (Eastwood et al., 2015). Although participants in the study were uniformly of low income, our measures did not include a sensitive index of individual-level income that may have been important to consider in the analyses. We also relied on self-reported measures for all of the social and behavioral variables. Although we used state-of-the-science measures delivered by computerized interviews, the results are still subject to reporting biases. Another limitation of our study was using the Gini coefficients of sparsely populated census tracts. Relying on geographically small areas in past studies has produced inconsistent results (Wilkinson & Pickett, 2006). Finally, the study design was cross-sectional and therefore does not allow for directional or causal inferences among variables. With these limitations in mind, we believe that the current findings have implications for designing prevention interventions aimed to address the adverse outcomes of HIV-related stigma.

Our findings should not be taken to suggest that HIV-related stigmas occur with more frequency and more adversity for women than men living in rural areas. To the contrary, we found no gender differences in internalized stigma or enacted stigma. Furthermore, our finding that enacted stigma was associated with more positive outcomes in terms of viral load may be an artifact of a third unmeasured variable or combination of variables, such as coping efficacy, personal resources and resiliency. Longitudinal studies are needed to examine the prospective effects of internalized stigma and enacted stigma on the health of people living with HIV in rural areas. Interventions to prevent the adverse effects of stigma will benefit from a better understanding of these possible factors. Our results do, however, suggest that women living in rural areas and experiencing greater internalized stigma may be in need of prevention interventions, such as programming to directly address internalized stigma in the prevention of depression. Although stigma is related to income inequality, the observed associations should also not be interpreted as suggesting that economic barriers to intervening on the adverse effects of stigma are insurmountable. To the contrary, HIV prevention interventions conducted in areas of greater income inequality have demonstrated robust positive outcomes (Huedo-Medina et al., 2010). Overall our findings caution against simple approaches, such as unidimensional conceptualizations of HIV stigma, or developing one-size fits all prevention interventions, or for people living on rural areas. The observed associations are complex and will require contextualized and nuanced understanding of stigma interventions and prevention programming.

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C. The University of Connecticut and Mercer University Institutional Review Boards approved all of the study procedures. All procedures performed were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

D. All participants provided informed consent in compliance with conducting self-administered anonymous surveys.

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Table 1

Descriptive characteristics of men and women participants receiving HIV care services.

	Men N = 124		Women N = 74		
Characteristic	**N**	**%**	**N**	**%**	**X^2**
African American	100	81	66	89	
Caucasian	24	19	8	11	3.7
Clinic G distance	**Bini Index**	**HIV viral load**	**Quality of life**	**Internalized Stigma**	**Enacted Stigma**
Employed	25	20	20	26	
Disabled	54	44	26	35	4.2
Incarceration history	68	55	32	43	2.5
Missed clinic appointment due to transportation[a]	18	15	7	10	1.0
Unable to buy food[a]	28	23	21	28	0.8
CD4 < 200	16	13	9	12	0.9
Viral load > 100	35	29	18	26	0.2
	M	SD	M	SD	t
Age	45.4	12.2	46.6	11.5	0.7
Years of education	12.6	1.7	12.5	1.9	0.6
Years since HIV diagnosis	13.6	9.1	13.3	8.1	0.2
Absolute CD4 count	571.7	325.3	579.9	324.3	0.2
CD4/CD8 ratio	0.66	0.45	0.68	0.48	0.3
ART adherence	85.2	27.3	86.6	24.6	0.3
HIV viral load copies/mL	7,852	38,724	2,285	8,910	1.1
Quality of life score	22.5	5.4	21.6	6.2	1.1
Internalized stigma score	2.3	1.1	2.5	1.2	1.0
Enacted stigma score	2.2	3.0	1.9	3.1	0.5
Distance from clinic (miles)	10.4	11.3	8.8	9.3	1.0
Community Gini Index	0.48	0.07	0.47	0.06	0.8

Note

[a]past month

Table 2

Correlation matrix of variables included in models for men (above diagonal) and women (below diagonal).

Clinic distance	-	−.44 **	.06	.09	−.16	−.11
Gini Index	−.28 **	-	.05	−.15	−.02	−.02
HIV viral load	−.19	.24*	-	−.12	.17	.17
Quality of life	−.24 *	.20 *	−.06	-	−.19*	−.30 **
Internalized Stigma	.24 *	−.06	.11	−.18	-	41 **
Enacted Stigma	.24 *	−.06	−.27*	−.38 **	.42 **	-

Note:

*p < .05,

**p < .01

Table 3

Individual level multivariable logistic regression models for detectable / undetectable HIV viral load among men and women.

	Men		Women	
	Adj OR	**95%CI**	**Adj OR**	**95%CI**
Clinic distance	1.01	0.97–1.04	0.98	0.93–1.05
Gini Index	1.09	0.79–1.50	1.80*	1.08–2.98
Quality of life	0.97	0.90–1.05	0.95	0.86–1.05
Internalized stigma	1.29	0.89–1.89	1.67*	1.02–2.74
Enacted stigma	0.99	0.86–1.13	0.75*	0.58–0.95

Note: Adj OR = odds ratio adjusted for all variables in model,

* $p < .05$

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Table 4

Multi-level generalized estimating equations (GEE) models for detectable/undetectable HIV viral load among men and women.

	Total Sample			Men			Women		
	B	**Std. Error**	**Wald X^2**	**B**	**Std. Error**	**Wald X^2**	**B**	**Std. Error**	**Wald X^2**
Gender	0.01	0.17	0.01						
Clinic distance	−0.01	0.02	0.06	0.01	0.02	0.14	−0.02	0.03	0.20
Distance × Gender	0.01	0.02	0.29						
Gini Index	6.66	2.76	5.83*	1.47	3.14	0.22	11.85	4.83	6.01*
Gini × Gender	−5.19	3.00	2.98†						
Quality of Life (QoL)	−0.03	0.04	0.70	−0.04	0.04	0.78	−0.03	0.07	0.18
QoL × Gender	−0.01	0.04	0.01						
Internalized Stigma	0.41	0.14	7.76**	0.26	0.16	243	0.55	0.23	5.79*
Internalized Stigma × Gender	−0.14	0.13	1.13						
Enacted Stigma	−0.13	0.06	3.86*	−0.01	0.06	0.00	−0.26	0.12	4.70*
Enacted Stigma × Gender	0.13	0.70	3.53†						

Note:

† $p < .10$,

* $p < .05$,

** $p < .01$.

HIV viral load is coded as 0 (undetectable) and 1 (detectable).