

Resilience and Optimism as Moderators of the Negative Effects of Stigma on Women Living with HIV

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Abstract

Resilience and optimism may not only have main effects on health outcomes, but may also moderate and buffer negative effects of stressors. We examined whether dispositional resilience and optimism moderate the associations between HIV-related stigma in health care settings and health-related outcomes (trust in HIV health care providers and depression symptoms) among women living with HIV (WLHIV). One thousand four hundred five WLHIV in nine US cities completed validated questionnaires for cross-sectional analyses. Higher self-reported experienced and anticipated stigma and lower resilience and optimism were associated with higher depression symptoms and with lower trust in HIV providers. Importantly, resilience moderated the effects of experienced stigma (but not of anticipated stigma): When resilience was high, the association of experienced stigma with higher depression symptoms and lower trust in HIV providers was weaker compared with when resilience was low. Further, significant moderation effects suggested that when optimism was high, experienced and anticipated stigma was both less strongly associated with depression symptoms and with lower trust in one's HIV care providers compared with when optimism was low. Thus, the effects of experienced stigma on depression symptoms and provider trust were moderated by both resilience and optimism, but the effects of anticipated stigma were moderated only by optimism. Our findings suggest that in addition to their main effects,

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resilience and optimism may function as buffers against the harmful effects of stigma in health care settings. Therefore, optimism and resilience may be valuable intervention targets to reduce depression symptoms or improve trust in providers among populations that experience or anticipate stigma, such as WLHIV.

Keywords: HIV, stigma, resilience, depression, trust, optimism, moderation, provider

Introduction

PEOPLE LIVING WITH HIV (PLHIV) may experience stigma associated with their HIV status, which has negative effects on their physical and mental well-being.¹⁻⁶ When HIV-related stigma manifests in health care settings, PLHIV may find themselves distrusting their providers or avoiding the health care environment, possibly leading to medication nonadherence and missing clinic visits, which can have downstream negative consequences on HIV care outcomes.^{7,8} While there is some research on the associations among stigma, depression, and trust in one's provider, an understanding of the mechanisms that mediate or moderate these associations is notably missing. This is especially true for the population of women living with HIV (WLHIV), who are less likely than men to adhere to treatment and achieve viral suppression.⁹

Two personal characteristics that may buffer against harmful structural and interpersonal factors such as stigma are resilience and optimism. Resilience and optimism have been shown to serve as protective factors among people living with other chronic health conditions such as cancer and cardiovascular disease.^{10,11} In this study, we examined how resilience and optimism may moderate the association of experienced and anticipated stigma in health care settings with depression and trust in health care providers among WLHIV enrolled in the Women's Interagency HIV Study (WIHS),¹² a multi-site cohort study that is now known as The Multicenter AIDS Cohort (MACS)-WIHS Combined Cohort Study (MWCCS).

Studies suggest that HIV-related stigma is associated with suboptimal HIV health behaviors and outcomes, including missed visits, lower treatment self-efficacy,¹³ nonadherence to treatment, and reductions in viral load suppression rates.²⁻⁵ Stigma occurs when a group has an attribute that is perceived as discrediting in society.¹⁴ This attribute devalues individuals belonging to the group. HIV-related stigma that occurs in health care settings is particularly harmful, since these environments should be stigma-free and propatient regardless of patient circumstances.¹⁵ Stigma within health care settings can exacerbate negative physical and mental health outcomes,¹⁶ and eliminating stigma in clinic settings is a shared goal of public health and medicine.¹⁷ Further, many WLHIV may experience intersectional stigma related to having multiple stigmatized traits, such as living with HIV, being a woman, living in poverty, and identifying as a person of color, and these experiences of stigma can also be associated with poor physical and mental health.¹⁸

Individual characteristics may buffer against the negative effects of experiencing or anticipating stigma from others.¹⁹ PLHIV with such protective characteristics may be able to resist the negative implications of stigma from others in terms of how they feel about themselves and about the health care system *in general*. Coping theories posit that the effect of stressful situations on emotional well-being depends on

how individuals appraise the situation and which strategies they use to cope with the situation.²⁰ Previous literature has applied the stress and coping framework to conceptualize individual differences in response to stigma and discrimination²¹ and found that coping resources such as optimism can buffer the negative effects of stigma.²²

Coping resources include situational factors (e.g., social support) and individual difference factors. Two individual difference factors that may buffer against harmful structural and interpersonal factors such as stigma are resilience and optimism. Resilience is "adapting well in the face of adversity, trauma, tragedy, threats, or significant sources of stress," or "bouncing back" from challenging or unanticipated circumstances.²³ Limited research among PLHIV suggests that resilience is associated with better health outcomes, improved quality of life, and successful aging.^{24,25} Resilience theories suggest that while resilience can have a main effect on the psychosocial well-being and adjustment, perhaps the most important contribution of resilience is its ability to attenuate (i.e., moderate) the negative effects of negative life events and stressors on psychosocial functioning.²³ Therefore, we examined whether resilience could buffer the negative effects of social stigma on depression symptoms and health care provider trust.

Optimism encompasses a sense of hopefulness, a belief that situations will sort themselves and produce positive outcomes.²⁶ There is some research suggesting that optimism is associated with reduced anxiety and depression among PLHIV, which can then be linked to improved HIV care outcomes.²⁷ Theoretically, optimism may have main effects on health outcomes as well as moderating the effects of stress and adversity, and there is research providing support for both of these mechanisms.^{26,28}

In the present study, we examined how resilience and optimism moderate the associations that stigma experienced and anticipated in health care settings has with depression symptoms and with trust in health care providers among WLHIV. Depression is particularly prevalent among WLHIV²⁹ and depression symptoms increase the likelihood of failure across the HIV continuum of care.³⁰ Therefore, understanding the interplay between stigma and depression symptoms could be important. Our other outcome, trust in HIV care providers, is at the foundation of quality health care. HIV research suggests that when clinical providers are perceived as trustworthy, their patients' outcomes are better across the continuum of care.³¹⁻³³ Since WLHIV in the United States disproportionately identify as Black or Latina, and racism and the resulting provider mistrust among people of color also fuel health disparities,³⁴ examining determinants of provider trust among WLHIV is warranted and findings could produce actionable insights.³⁵

According to recent theories, medical mistrust is a rational response to structural and interpersonal stigma experiences

with the aim of preventing future mistreatment.³⁶ We argue that stigma experienced and anticipated in health care settings may have important effects on provider trust and understanding factors that may buffer these effects is important both theoretically and practically.

Methods

Participants and procedures

Participants included 1405 WLHIV from the WIHS, a multi-site cohort study¹² that is now known as the MWCCS. Participants at all nine sites of the WIHS including New York (Bronx and Brooklyn), Washington DC, Chicago, San Francisco, Georgia (Emory), Alabama and Mississippi (UAB-MS), Florida (Miami), and North Carolina (UNC) completed measures related to patient/health care provider relationships for this study. These data were merged with the data collected for the larger WIHS. The study was approved by the Institutional Review Board at each site.

Measures

Experienced HIV-related stigma in health care settings. We assessed experienced HIV-related stigma in health care settings using a 6-item measure adapted from the experienced stigma subscale measuring HIV-related stigma among health facility staff.³⁷ (e.g., “Healthcare workers talked badly about people living with HIV”) are rated on a 5-point Likert-type scale (1=Never, 5=Almost always). Previous research suggests that this adapted measure shows good internal reliability and validity (significant associations with HIV-related health outcomes).¹ In this study, Cronbach’s alpha coefficient was 0.75.

Anticipated HIV-related stigma in health care settings. The 3-item anticipated HIV stigma in health care settings subscale of the HIV Stigma Framework Scale³⁸ was used. A sample item is “Healthcare workers will avoid touching me.” Responses were recorded using a 5-point Likert-type scale (1=Very unlikely, 5=Very likely). In the current study, Cronbach’s alpha reliability coefficient was 0.89.

Trust in HIV care providers. We assessed trust in one’s HIV care providers using the validated 8-item Safran Physician Trust Subscale³⁹ (e.g., “Your HIV care providers care as much as you do about your health”) rated on a 5-point Likert-type scale ranging from 1 (Strongly disagree) to 5 (Strongly agree). In this study, Cronbach’s alpha reliability coefficient was 0.82.

Depression symptoms. The 20-item validated Center for Epidemiological Studies Depression (CES-D) scale (e.g., “I was bothered by things that usually don’t bother me”) was used to assess depression symptoms.⁴⁰ Response options include rarely (<1 day), some (1–2 days), occasionally (3–4 days), and most (5–7 days). Higher scores indicate the presence of greater depressive symptomatology.

Resilience. Dispositional resilience was assessed with the 10-item version of the Connor–Davidson Resilience Scale (CD-RISC).^{41,42} Items (e.g., “I am able to adapt when changes occur”) are rated on a 5-point Likert-type scale

(1 = not true at all, 5 = true nearly all the time), with higher scores indicating higher resilience. In the current study, Cronbach’s alpha reliability coefficient was 0.91.

Optimism. We assessed optimism using the 6-item Life-Outcomes Orientation Test-Revised.^{43,44} Items (e.g., “In uncertain times, I usually expect the best”) are rated on a 5-point Likert-type scale (1 = I disagree a lot, 5 = I agree a lot) with higher scores indicating higher optimism. In this study, Cronbach’s alpha reliability coefficient was 0.66.

Statistical analyses

In separate analyses, we examined whether resilience and optimism moderate the effect of experienced or anticipated stigma on depression symptoms and on provider trust. For this, we conducted moderation analyses using the PROCESS macro for SPSS.⁴⁵ Associations are reported as regression coefficients with 95% percentile confidence intervals (CIs).

TABLE 1. DESCRIPTIVE STATISTICS OF THE SAMPLE (N=1405)

Variable	n	%
Patient race		
White	204	14.5
African American	1060	75.4
Other	141	10.0
HIV care provider race		
White	793	56.4
African American	243	17.3
Other	346	24.6
Education		
No school	4	0.3
Grades 1–6	21	1.5
Grades 7–11	424	30.2
Completed high school	452	32.2
Some college	393	28.0
Completed 4-year college	79	5.6
Attended/completed graduate school	31	2.2
Income		
≤\$6000	153	10.9
\$6001–12,000	505	35.9
\$12,001–18,000	205	14.6
\$18,001–24,000	116	8.3
\$24,001–30,000	78	5.6
\$30,001–36,000	71	5.1
\$36,001–75,000	152	10.5
≥\$75,000	63	4.5
Illicit drug use in the last 6 months		
Yes	347	24.7
No	1057	75.3
	<i>Mean (SD)</i>	<i>Range</i>
Age	51.24 (9.09)	28–82
Experienced HIV stigma	1.17 (0.41)	1–5
Anticipated HIV stigma	1.47 (0.81)	1–5
Depression symptoms	12.17 (11.57)	0–54
Trust in HIV providers	4.24 (0.65)	1–5
Resilience	4.02 (0.73)	1–5
Optimism	3.85 (0.75)	1–5

SD, standard deviation.

TABLE 2. COEFFICIENTS AND CONFIDENCE INTERVALS OF MODERATION ANALYSES

Outcome: DEP	B (SE)	95% CI		Outcome: TCP	B (SE)	95% CI	
		Lower	Upper			Lower	Upper
ES	3.78 (0.65)	2.50	5.07	ES	-0.26 (0.04)	-0.34	-0.18
RES	-7.09 (0.37)	-7.83	-6.36	RES	0.28 (0.02)	0.24	0.33
ES×RES	-1.94 (0.72)	-3.36	-0.53	ES×RES	0.14 (0.05)	0.05	0.23
AS	1.50 (0.34)	0.83	2.16	AS	-0.18 (0.02)	-0.22	-0.14
RES	-7.22 (0.38)	-7.97	-6.48	RES	0.27 (0.02)	0.23	0.32
AS×RES	-0.10 (0.40)	-0.88	0.68	AS×RES	0.04 (0.02)	-0.01	0.09
ES	3.10 (0.68)	1.77	4.43	ES	-0.23 (0.04)	-0.31	-0.14
OPT	-6.94 (0.37)	-7.66	-6.22	OPT	0.19 (0.02)	0.14	0.23
ES×OPT	-3.30 (0.89)	-5.05	-1.55	ES×OPT	0.26 (0.06)	0.14	0.37
AS	1.31 (0.34)	0.64	1.98	AS	-0.18 (0.02)	-0.23	-0.14
OPT	-7.00 (0.37)	-7.73	-6.27	OPT	0.18 (0.02)	0.14	0.23
AS×OPT	-1.00 (0.47)	-1.92	-0.07	AS×OPT	0.08 (0.03)	0.02	0.14

Level of education, income, patient race, provider race, and illicit drug use were used as covariates.

AS, anticipated stigma; CI, confidence interval; DEP, depression symptoms; ES, experienced stigma; OPT, optimism; RES, resilience; SE, standard error; TCP, trust in HIV care providers.

For statistically significant interaction effects, we examined simple slopes (regression coefficients for the independent variable) at 1 standard deviation (SD) above and below the mean of each moderator. All analyses were cross-sectional, adjusting for age, level of education, income, patient race, provider race, and illicit drug use.

Results

Descriptive statistics of the sample are presented in Table 1. Results of the regression analyses (adjusted for covariates) are presented in Table 2.

Experienced HIV stigma in health care settings and resilience

First, we examined the association that experienced stigma, resilience, and their interaction have with depression symptoms (adjusting for covariates). Both main effects were significant (suggesting higher experienced stigma and lower resilience are associated with higher depression symptom severity). Importantly, the interaction term was also significant [$B = -1.94$, standard error (SE) = 0.72, $p = 0.007$, CI (-3.36 to -0.53)]. Simple slope analyses (again adjusting for covariates) suggested that experienced stigma has a stronger positive association with depression symptoms at low (-1 SD) levels of resilience [$B = 5.21$, SE = 0.80, $p = 0.000$, CI (3.63 to 6.78)], compared with high (+1 SD) levels of resilience [$B = 2.36$, SE = 0.88, $p = 0.007$, CI (0.64 to 4.08)]; see Fig. 1A]. That is, in addition to having a main effect on lower depression symptoms, resilience also moderates the association between experienced stigma and depression symptoms.

Similarly, we examined the association that experienced stigma and resilience have with trust in HIV care providers. Both main effects were significant (Table 2, right-hand side). The interaction effect between experienced stigma and resilience was again significant [$B = 0.14$, SE = 0.05, $p = 0.003$, CI (0.05 to 0.23)]. Simple slope analyses suggested that experienced stigma has a stronger negative association with

trust in HIV care providers at low levels of resilience [$B = -0.36$, SE = 0.05, $p = 0.000$, CI (-0.46 to -0.26)] compared with high levels of resilience [$B = -0.15$, SE = 0.05, $p = 0.003$, CI (-0.26 to -0.05)]; see Fig. 1B].

Anticipated HIV stigma in health care settings and resilience

Next, we assessed the association of anticipated stigma and resilience with depression symptoms. The interaction term between anticipated stigma and resilience was not significant [$B = -0.10$, SE = 0.40, $p = 0.797$, CI (-0.88 to 0.68)]. Similarly, the interaction between anticipated stigma and resilience was not significant when trust in HIV care providers was the outcome [$B = 0.04$, SE = 0.02, $p = 0.104$, CI (-0.01 to 0.09)].

Experienced HIV stigma in health care settings and optimism

We examined whether the association between experienced stigma and depression symptoms was moderated by optimism. Results indicated a significant interaction effect between experienced stigma and optimism [$B = -3.30$, SE = 0.89, $p = 0.000$, CI (-5.05 to -1.55)]. Simple slope analyses suggested that at low levels of optimism, experienced stigma is significantly associated with depression symptoms [$B = 5.57$, SE = 0.82, $p = 0.000$, CI (3.96 to 7.19)], but not at high levels of optimism [$B = 0.62$, SE = 1.06, $p = 0.557$, CI (-1.46 to 2.71)]; see Fig. 2A]. Similarly, the association between experienced stigma and trust in HIV care providers was significantly moderated by optimism [$B = 0.26$, SE = 0.06, $p = 0.000$, CI (0.14 to 0.37)].

Simple slope analyses suggested that at low levels of optimism, experienced stigma is significantly associated with lower trust in HIV care providers [$B = -0.42$, SE = 0.05, $p = 0.000$, CI (-0.52 to -0.31)], but not at high levels of optimism [$B = -0.03$, SE = 0.07, $p = 0.620$, CI (-0.16 to 0.10)]; see Fig. 2B].

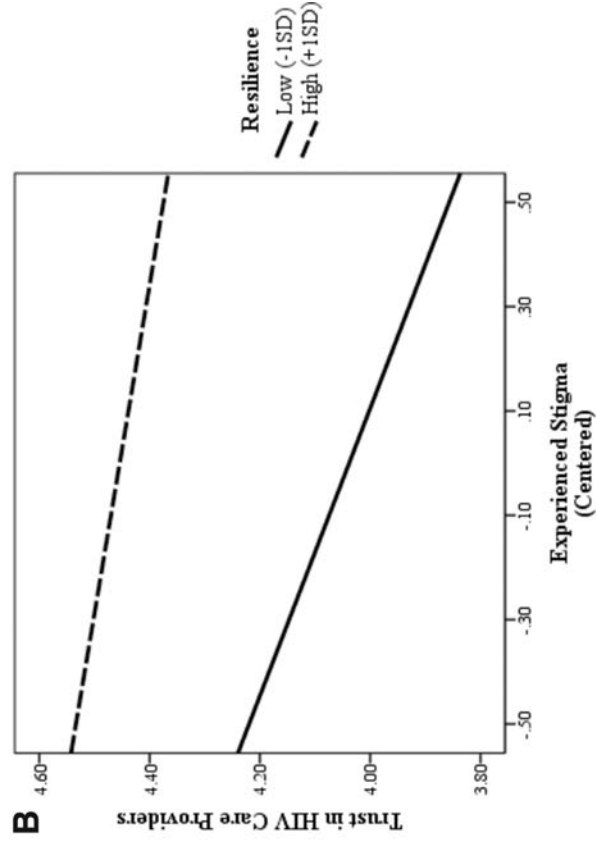
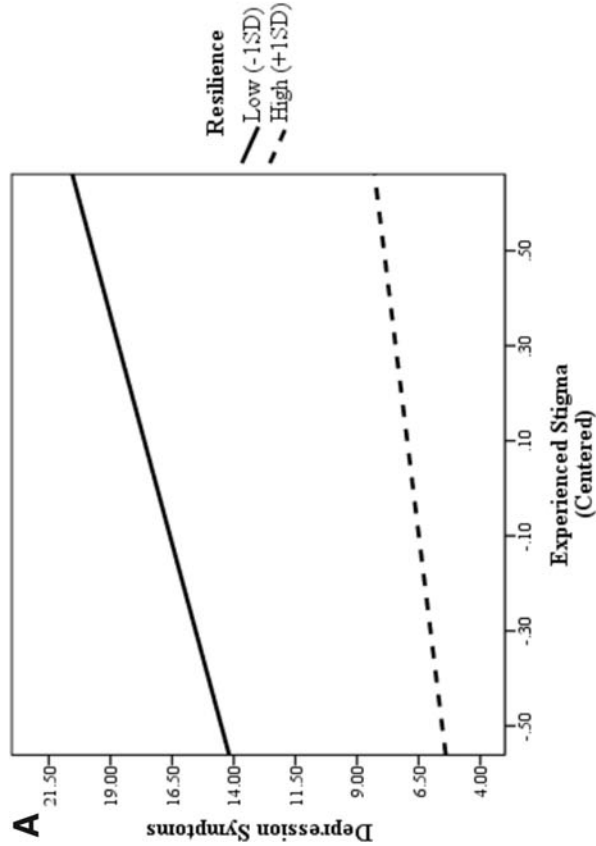


FIG. 1. (A, B) Interaction between resilience and experienced stigma in health care settings on depressive symptoms and trust in HIV care providers.

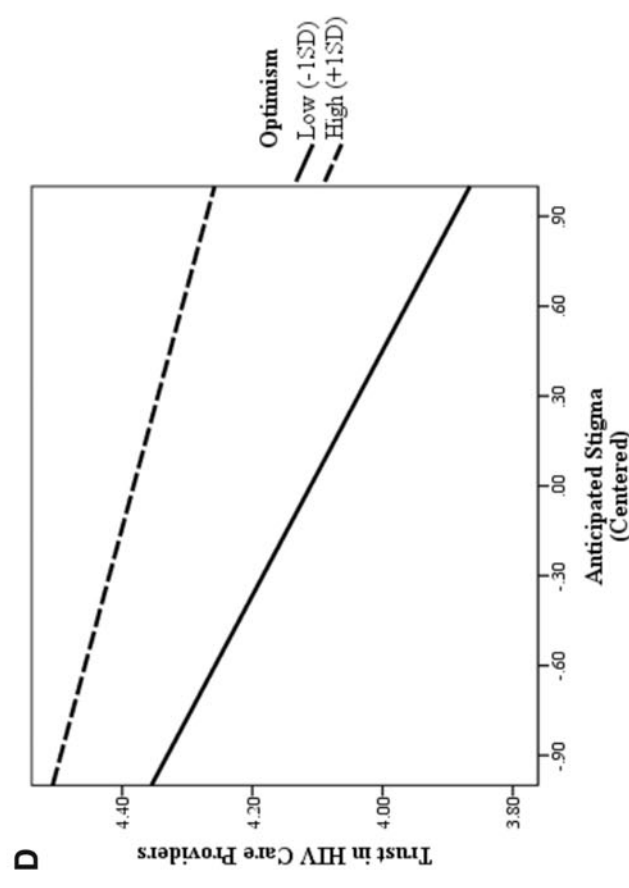
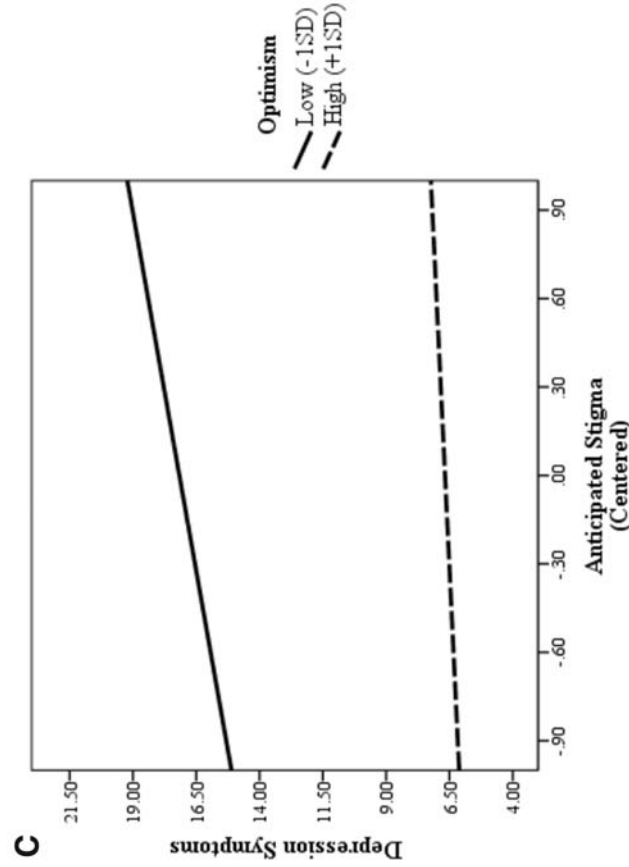
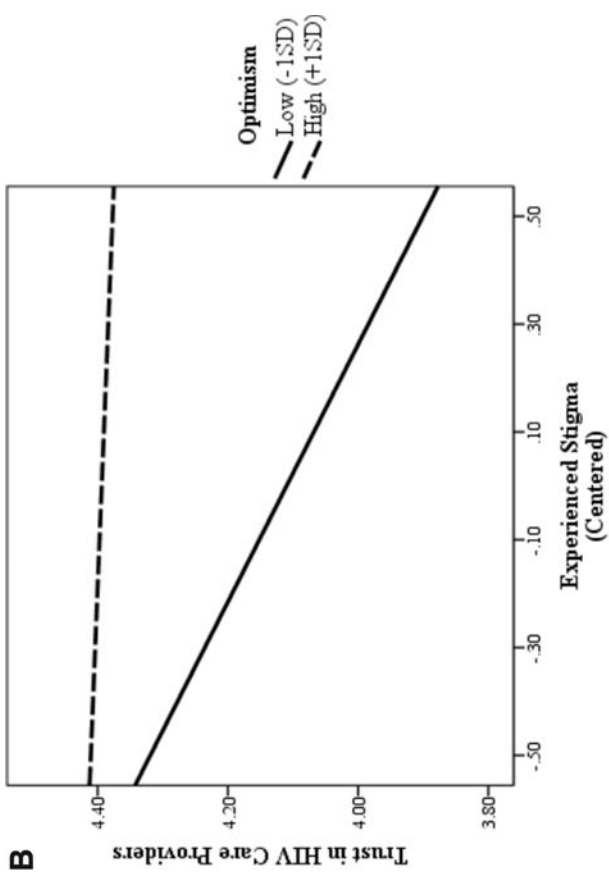
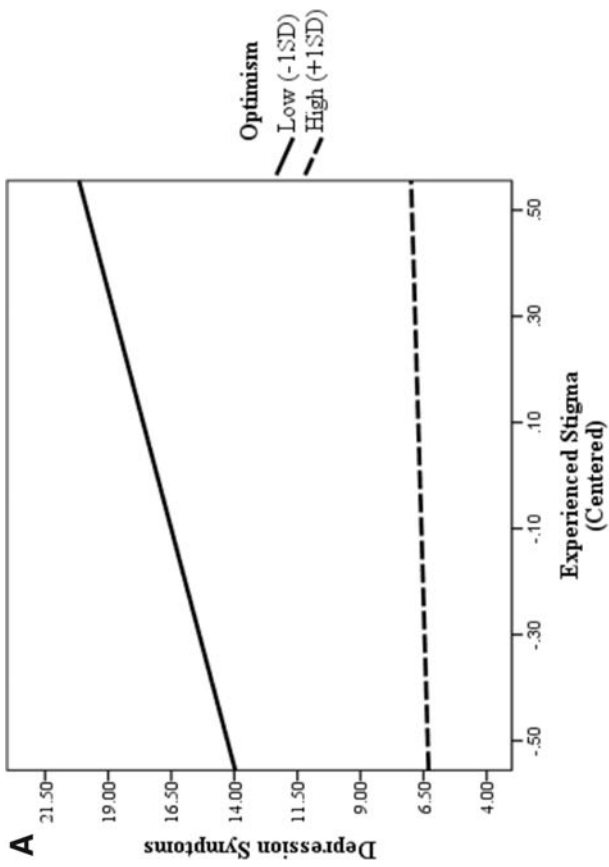


FIG. 2. (A–D) Interaction between optimism and experienced and anticipated stigma in health care settings on depressive symptoms and trust in HIV.

Anticipated HIV stigma in health care settings and optimism

Finally, we assessed the association that anticipated stigma and optimism have with depression symptoms. This analysis indicated a significant interaction effect between anticipated stigma and optimism [$B = -1.00$, $SE = 0.47$, $p = 0.034$, $CI (-1.92 \text{ to } -0.07)$]. Simple slope analyses suggested that anticipated stigma is significantly associated with depression symptoms at low levels of optimism [$B = 2.06$, $SE = 0.45$, $p = 0.000$, $CI (1.16 \text{ to } 2.95)$], but not at high levels of optimism [$B = 0.56$, $SE = 0.52$, $p = 0.287$, $CI (-0.47 \text{ to } 1.59)$]; see Fig. 2C]. Similarly, the interaction effect between anticipated stigma and optimism on trust in HIV providers was significant [$B = 0.08$, $SE = 0.03$, $p = 0.006$, $CI (0.02 \text{ to } 0.14)$].

Simple slope analyses suggested that the association between anticipated stigma and trust in HIV care providers was stronger at low levels of optimism [$B = -0.24$, $SE = 0.03$, $p = 0.000$, $CI (-0.30 \text{ to } -0.19)$] compared with high levels of optimism [$B = -0.12$, $SE = 0.03$, $p = 0.000$, $CI (-0.19 \text{ to } -0.06)$]; see Fig. 2D]. All coefficients and CIs for main and interaction (moderation) effects are presented in Table 2.

Discussion

Our results suggest that higher self-reported levels of experienced stigma and anticipated stigma in health care settings are associated with higher depression symptoms as well as with lower levels of trust in HIV providers. We also found buffering effects of resilience and optimism in many of these associations. Higher levels of experienced stigma were associated with higher levels of depression symptoms and lower levels of trust in providers at both high and low levels of resilience. However, significant interaction effects and follow-up simple slope analyses indicated that when resilience was low, the association between experienced stigma and depression symptoms was stronger compared with the association when high levels of resilience were reported. Similarly, when resilience was low, the association between experienced stigma and lack of trust in one's providers was stronger compared with the association at high levels of resilience.

Our analyses suggest that resilience not only has a main effect on (lower) depression symptoms and (higher) provider trust, but may also function as a buffer against the harmful effects of stigma experienced in health care settings. In contrast, we did not observe a buffering effect of resilience when examining the association between anticipated stigma and depression symptoms or trust in care providers.

We found similar results when using optimism as a potential moderator of experienced stigma. When optimism was low, experienced stigma was significantly associated with depression symptoms and with trust in one's HIV care providers. However, when optimism was high, not only was depression lower and trust higher, the association that experienced stigma has with depression symptoms and provider trust was no longer significant as well.

The associations between anticipated HIV stigma in health care settings and both outcomes were also significantly moderated by optimism. Anticipated stigma was associated with depression symptoms when optimism was low but not when optimism was high. Further, when the level of opti-

mism was low, the negative effect of anticipated stigma on trust in one's provider was significantly stronger than when compared with higher levels of optimism.

Thus, the effect of anticipated stigma was moderated by optimism, but not by resilience. However, for experienced stigma, the moderating effects of resilience were generally stronger compared with the moderating effects of optimism. It is possible that optimism, which by definition is a future-oriented construct,²² interacts more strongly with anticipated stigma (also a future-oriented construct). It is also possible that optimism shows a delayed effect (which we could not capture in this study), whereas resilience has a more immediate effect on outcomes (since it helps to cope with stressors that have already happened).

Our study had several limitations. The data were cross-sectional, limiting our ability to infer causality. Self-report measures were used for most constructs, which may introduce response bias. We only measured individual resilience, whereas the need to assess interpersonal and community resilience for PLHIV has been identified.⁴⁶ A strong focus on individual resilience may be criticized for downplaying the need for social and structural change.⁴⁷ The sample consisted of women enrolled in an observational cohort study. Therefore, results may not generalize to men or people with HIV not in a cohort study. Even though the WIHS was initially established to be representative of WLHIV in the United States with respect to overall demographics, participants are now older than the general population of WLHIV in the United States. Another limitation is that no data were available on how many participants in the cohort declined to participate in our substudy.

Despite these limitations, our findings suggest that optimism and resilience may be valuable change objectives to target within interventions that aim to reduce depression symptoms or improve trust in providers, and by extension improve engagement in the health care system, among populations that experience or anticipate stigma, such as WLHIV. Results suggest that WLHIV who are low in resilience or optimism and high in experienced or anticipated stigma are especially vulnerable and may benefit from such interventions, which should also address structural factors contributing to worse outcomes for WLHIV.⁴⁸

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