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Association between Discrimination in Healthcare Settings and HIV Medication Adherence: Mediating Psychosocial Mechanisms

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HIV-related stigma and discrimination

- Between 26-40% of PLHIV report discrimination by a healthcare worker since becoming infected ^{1,2}
- Positive relationships with providers known facilitator to ART adherence ^{3,4}
- Perceived discrimination has been shown to impact access to care and adherence to scheduled visits among HIV-infected individuals²
- Little is known about how discrimination in health care settings may impact ART adherence and downstream clinical outcomes.



HIV-related stigma and discrimination

- HIV-related stigma predicts ART non-adherence¹
- Discrimination (a negative external stimulus) may be associated with feelings of **internalized stigma**²
- Internalized stigma is associated with depressive symptoms³
- Depressive symptoms consistently associated with ART non-adherence⁴



Conceptual Framework/Hypotheses

Healthcare
stigma

↑Internalized
stigma

↑Depression

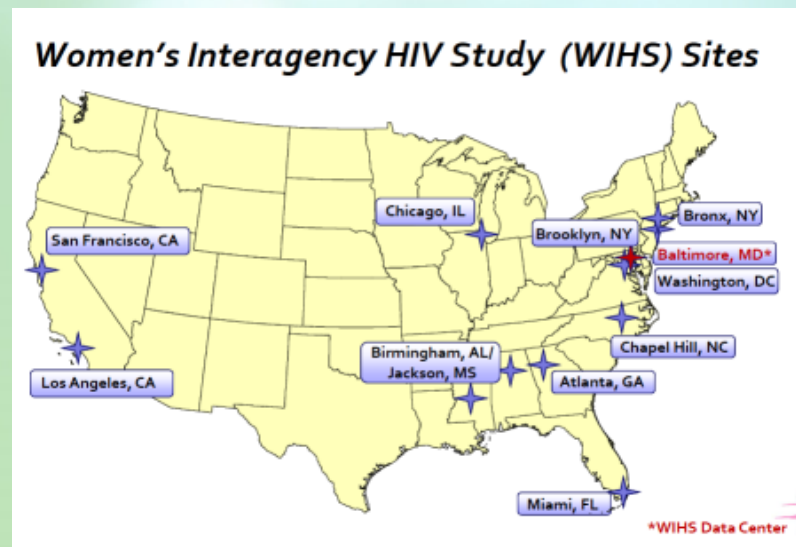
↓Medication
adherence





The Women's Interagency HIV Study (WIHS)

- 1994 – present in 9 WIHS sites
- Participants recruited from range of settings:
 - HIV primary care clinics, HIV testing sites, hospital-based programs, drug rehabilitation programs, women's support groups, and referrals from enrolled participants



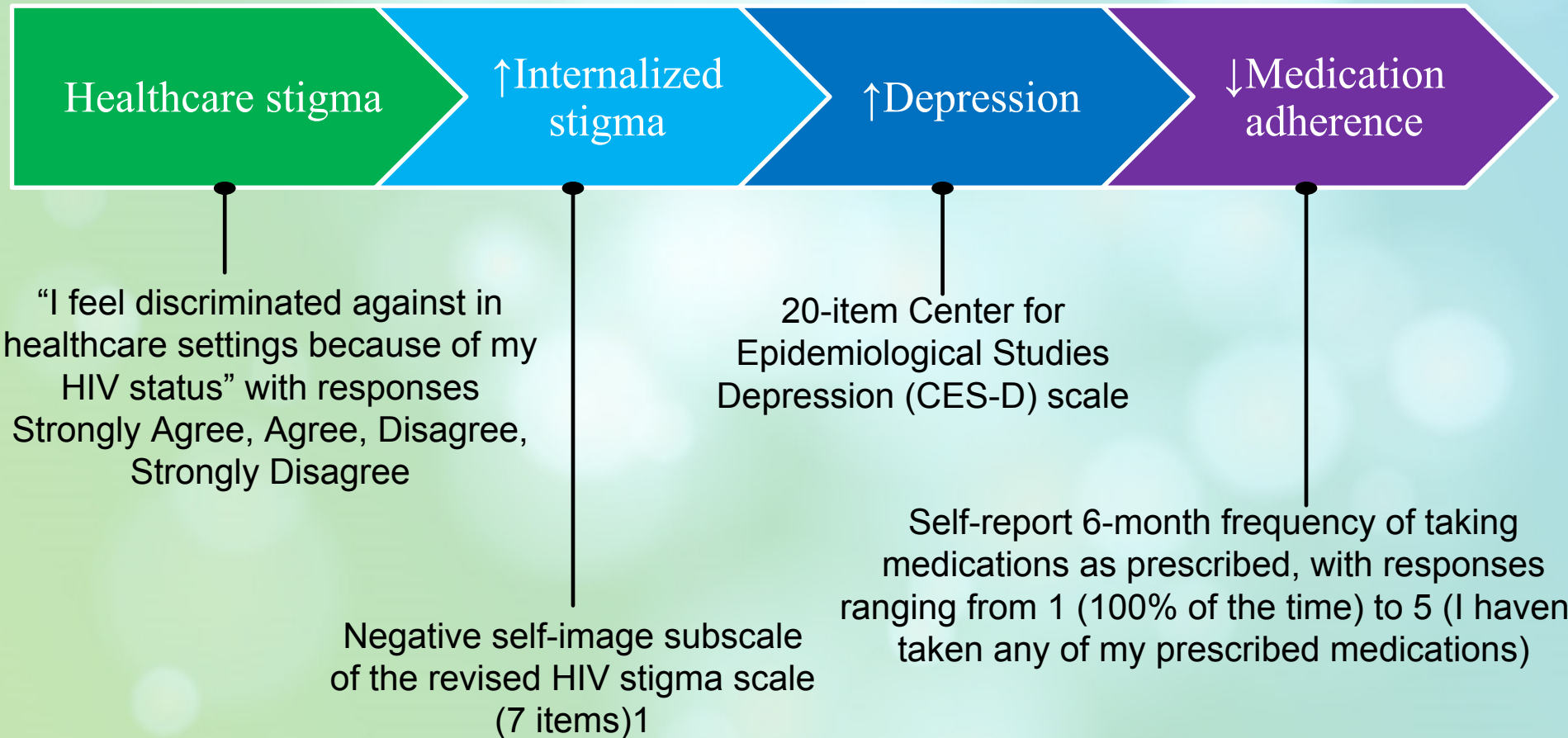


Methods

- Cross-sectional analyses were conducted in a sample of 1,356 diverse women living with HIV taken from April 2014 to March 2015
- Semiannually:
 - interview-administered questionnaire in English or Spanish
 - physical exam
 - biological specimens
- All procedures approved by IRBs at each participating site



Measures



1) Berger BE, Ferrans CE, Lashley FR. Measuring stigma in people with HIV: psychometric assessment of the HIV stigma scale. *Res Nurs Health*. Dec 2001;24(6):518-529.



Analysis

- Multiple linear regression and logistic regression with discrimination in healthcare settings as main independent variable and ART adherence as dependent variable.
- Mediation and serial mediation assessed using indirect effects analysis with bootstrapping to test for internalized stigma and depression as mediators
- Covariates: race, age, time on ART, illicit drug use, income, and education



Results: Table 1

Descriptive Statistics for the Study Sample (N = 1356)

Variable	n (%)	
Race		
Non-Hispanic white	149 (11)	
Hispanic	212 (16)	
Black/African American	951 (70)	
Other	1207 (3)	
Illicit drug use	297 (22.0)	
<95% Adherence	236 (17.4)	
Variable	Mean (SD)	Range
Age (years)	48.75 (9.05)	25 - 80
Education	4.10 (1.05)	1 - 7
Income	3.29 (2.06)	1 - 8
Days on ART	3832 (2466)	1 - 8086
Internalized HIV-related stigma	1.80 (0.67)	1 - 4
Depressive symptoms	12.15 (11.30)	0 - 56
Healthcare discrimination	1.72 (0.79)	1 - 4

Association between health care discrimination and adherence

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	Optimal ART Medication Adherence	
	AOR	(95% CI)
Reported discrimination in healthcare setting	0.81 *	(0.68, 0.97)
Age at visit	1.03***	(1.01, 1.05)
Time on ART (days)	1.00**	(1.0, 1.0)
Any drug use	0.39***	(0.29, 0.54)
Income	1.01	(0.93, 1.09)
Education	0.98	(0.84, 1.14)
Race (white ref, nonwhite)	0.49*	(0.28, 0.88)

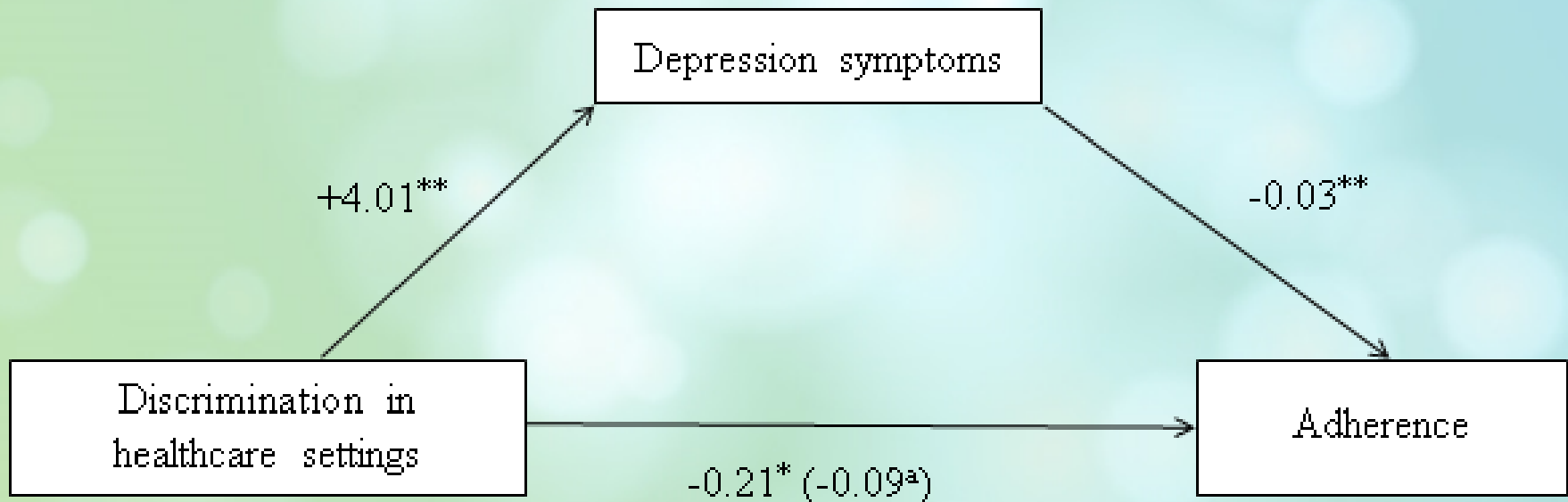
*p<0.05, **<0.01, ***<0.001



Results:

Significant Mediation

(i.e., indirect effect $B = -0.11$, 95% CI $[-0.18, -0.06]$)



^a When depression scores are in the model.

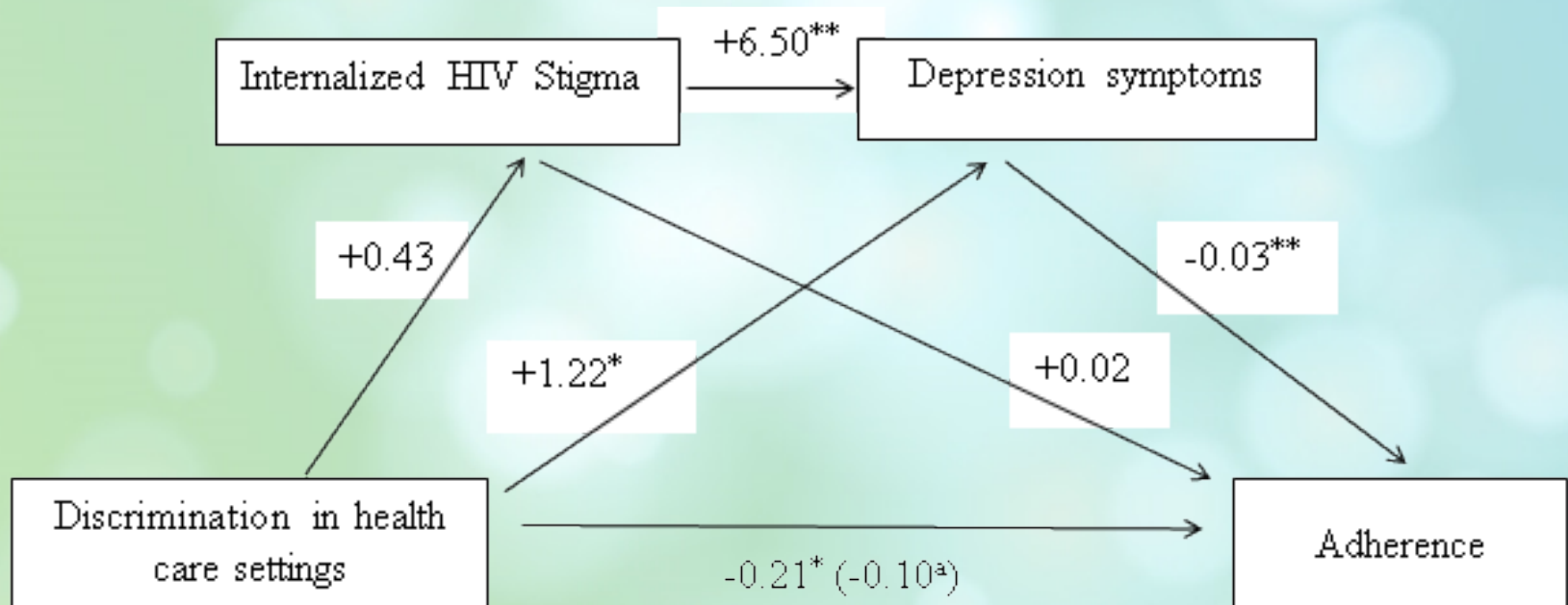
* $p < .05$; ** $p < .01$



Results:

Significant Serial Mediation

(i.e., indirect effect $B = -0.08$, $SE = 0.02$, $CI [-0.12, -0.04]$)



^a When internalized HIV stigma and depression scores are in the model.

* $p < .05$; ** $p < .01$



Discussion

- Perceived discrimination in healthcare settings is associated with sub-optimal ART adherence
- Association mediated in a serial fashion by internalized stigma and by depressive symptoms, as hypothesized
- Adds to growing literature that healthcare discrimination contributes to worse health outcomes among HIV-infected populations ^{1,2}





Discussion continued..

- Strengths
 - Large sample of geographically and racially diverse women
 - Valid and reliable measures of assessment
 - Did not find evidence of reverse causality
- Limitations
 - Cross-sectional data
 - Healthcare discrimination assessed with a single item
 - Only self-reported ART adherence was available



Conclusions

- Much is at stake when people living with HIV perceive discrimination in a healthcare setting
- Future research should assess whether the serial mediation relationship described holds true in longitudinal studies and among men
- Interventions to reduce health care discrimination may be important strategy to improve ART adherence and clinical outcomes for HIV-infected populations



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