Adherence 2017

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IAPAC
Internationl Association of Providers of AIDS Care
PIM
Postgraduate Institute for Medicine
Association between Discrimination in Healthcare Settings and HIV Medication Adherence: Mediating Psychosocial Mechanisms

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 individuals\(^2\)
- Little is known about how discrimination in healthcare settings may impact ART adherence and downstream clinical outcomes.

HIV-related stigma and discrimination

- HIV-related stigma predicts ART non-adherence\(^1\)
- Discrimination (a negative external stimulus) may be associated with feelings of internalized stigma\(^2\)
- Internalized stigma is associated with depressive symptoms\(^3\)
- Depressive symptoms consistently associated with ART non-adherence\(^4\)

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

- Healthcare stigma
- Internalized stigma
- Depression
- Medication adherence

“I feel discriminated against in healthcare settings because of my HIV status” with responses Strongly Agree, Agree, Disagree, Strongly Disagree

- Negative self-image subscale of the revised HIV stigma scale (7 items)

- 20-item Center for Epidemiological Studies Depression (CES-D) scale

- Self-report 6-month frequency of taking medications as prescribed, with responses ranging from 1 (100% of the time) to 5 (I haven't taken any of my prescribed medications)

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)

<table>
<thead>
<tr>
<th>Variable</th>
<th>n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Race</strong></td>
<td></td>
</tr>
<tr>
<td>Non-Hispanic white</td>
<td>149 (11)</td>
</tr>
<tr>
<td>Hispanic</td>
<td>212 (16)</td>
</tr>
<tr>
<td>Black/African American</td>
<td>951 (70)</td>
</tr>
<tr>
<td>Other</td>
<td>1207 (3)</td>
</tr>
<tr>
<td><strong>Illicit drug use</strong></td>
<td>297 (22.0)</td>
</tr>
<tr>
<td>&lt;95% Adherence</td>
<td>236 (17.4)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean (SD)</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>48.75 (9.05)</td>
<td>25 - 80</td>
</tr>
<tr>
<td>Education</td>
<td>4.10 (1.05)</td>
<td>1 - 7</td>
</tr>
<tr>
<td>Income</td>
<td>3.29 (2.06)</td>
<td>1 - 8</td>
</tr>
<tr>
<td>Days on ART</td>
<td>3832 (2466)</td>
<td>1 - 8086</td>
</tr>
<tr>
<td>Internalized HIV-related stigma</td>
<td>1.80 (0.67)</td>
<td>1 - 4</td>
</tr>
<tr>
<td>Depressive symptoms</td>
<td>12.15 (11.30)</td>
<td>0 - 56</td>
</tr>
<tr>
<td>Healthcare discrimination</td>
<td>1.72 (0.79)</td>
<td>1 - 4</td>
</tr>
</tbody>
</table>
## Association between health care discrimination and adherence

<table>
<thead>
<tr>
<th></th>
<th>Optimal ART Medication Adherence</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AOR</td>
</tr>
<tr>
<td>Reported discrimination in healthcare setting</td>
<td>0.81*</td>
</tr>
<tr>
<td>Age at visit</td>
<td>1.03***</td>
</tr>
<tr>
<td>Time on ART (days)</td>
<td>1.00**</td>
</tr>
<tr>
<td>Any drug use</td>
<td>0.39***</td>
</tr>
<tr>
<td>Income</td>
<td>1.01</td>
</tr>
<tr>
<td>Education</td>
<td>0.98</td>
</tr>
<tr>
<td>Race (white ref, nonwhite)</td>
<td>0.49*</td>
</tr>
</tbody>
</table>

*p<0.05, **<0.01, ***<0.001
Results:
Significant Mediation
(i.e., indirect effect B = -0.11, 95% CI [-0.18,-0.06])

\[ \text{Depression symptoms} \]

\[ +4.01^{**} \]
\[ -0.03^{**} \]
\[ -0.21^{*} (-0.09^{a}) \]

\[ \text{Discrimination in healthcare settings} \]
\[ \text{Adherence} \]

\( ^a \) 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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