Testing the Health Care Empowerment Model Among Persons Living with HIV for Antiretroviral Therapy Adherence

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Conflict of Interest - Disclosure

Jacob J. van den Berg, PhD, Torsten B. Neilands, PhD, Mallory O. Johnson, PhD, Bing Chen, MA, & Parya Saberi, PharmD, MAS

Have no real or apparent conflicts of interest to report
Overview

- HIV Care Continuum
- Health Care Empowerment
- Methods
- Results
- Discussion
- Acknowledgments
- Questions/Comments
HIV Care Continuum, 2011

Overall: Of the 1.2 million Americans living with HIV, only 30% have achieved viral suppression.

Sequential stages of HIV Care

- Diagnosed: 86%
- Linked to Care: 80%
- Retained in Care: 40%
- Prescribed ART: 37%
- Virally Suppressed: 30%

3/10 had virus under control

CDC, 2014
How might we directly impact the HIV Care Continuum?
Health Care Empowerment

- Tolerant of Uncertainty
  - Actively participates in one’s own health care
  - Balances emotions with rationale decision-making

- Informed
  - Understands illness/treatment/risks & benefits

- Committed
  - Maintains engagement with provider/treatment

- Collaborative
  - Involved in clinical decision-making

Johnson (2011)
Theoretical Framework

**Personal Resources:**
- Social Support
- Health Care Provider Relationship
- HIV Treatment Knowledge

**Contextual/Environmental Factors:**
- Stigma
- Trauma

**Intrapersonal Factors:**
- Depression

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**Health Care Empowerment**

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**ART Adherence**

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**Mediator**

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**Outcome**

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**Health Care Empowerment Model**

1. Health Belief Model\(^4\)
2. Stress and Coping Theory\(^2\)
3. Social Problem Solving Theory\(^1\)
4. Social Action Theory\(^3\)

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\(^1\) Ewart, 2004; \(^2\) Lazarus & Folkman, 1984; \(^3\) D’Zurilla & Goldfried, 1971; \(^4\) Janz & Becker, 1984; \(^5\) Johnson et al., 2012

(promising framework for understanding and intervening on health care engagement)
Methods

- Participants \((N = 1,494)\) were recruited from social networking sites and completed an online survey through Qualtrics

- Inclusion criteria:
  - 18 years or older
  - Self-reported HIV+ serostatus
  - Currently live in the U.S.

- Study reviewed and approved by UCSF IRB

- No monetary incentive provided

Yuan, Bare, Johnson, Saberi (2014)
Fun Facts

- “Did you know that your tongue has a unique print similar to your fingerprints?”
- “Did you know that your eyes can see about ten million different colors?”
- “Do you know of a natural substance that can be potentially effective against HIV?” (prior to survey)
# Measures

<table>
<thead>
<tr>
<th>Factor</th>
<th>Measure</th>
<th>Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demographics: age, gender, race/ethnicity, sexual orientation, educational level, student status, employment status, and perceived financial stability</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trauma (ever)</td>
<td>1 question</td>
<td>“Yes/No” response: 1 = “Yes”; 2 = “No”</td>
</tr>
<tr>
<td>HIV stigma (ever)</td>
<td>5-item</td>
<td>0 = “Not at all” to 4 = “Often”</td>
</tr>
<tr>
<td>Depression (two weeks)</td>
<td>PHQ-9</td>
<td>0 = “Not at all” to 3 = “Every single day”</td>
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<tr>
<td>Social support</td>
<td>1-item</td>
<td>1 = “Strongly disagree” to 5 = “Strongly agree”</td>
</tr>
<tr>
<td>Provider relationship</td>
<td>1-item</td>
<td>1 = “Strongly disagree” to 5 = “Strongly agree”</td>
</tr>
<tr>
<td>Health care empowerment</td>
<td>8-item</td>
<td>0 = “Strongly disagree” to 4 = “Strongly agree”</td>
</tr>
<tr>
<td>HIV treatment knowledge</td>
<td>HTKS</td>
<td>“True”, “False”, or “Don’t Know”</td>
</tr>
<tr>
<td>ART adherence (30-day)</td>
<td>1-item</td>
<td>0 = “Very poor” to 6 = “Excellent”</td>
</tr>
</tbody>
</table>
Analyses

- Descriptive and zero-order correlation analyses were conducted using SPSS 20.0.0
- Significant zero-order correlations were examined between IVs and outcome, as well as b/t the outcome and mediator
- SEM analysis conducting using Mplus, Version 7.4
- 5,000 bootstrap replications were used
Results - Demographics

- Age: $M = 45.6; SD = 11.4$
- 93.1% Male
- 71.1% Non-Hispanic White
- 86.8% Gay
- 51.5% had some college
- 87.6% not currently enrolled in school
- 45.9% working full-time
- 46.9% “Barely getting by”
### Results - $rs$, $Ms$, $SDs$, alphas for study variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Adherence</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>2. Trauma</td>
<td>.071*</td>
<td>--</td>
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<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
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<tr>
<td>3. Health care empowerment</td>
<td>.090**</td>
<td>-.021</td>
<td>--</td>
<td>--</td>
<td>--</td>
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<tr>
<td>4. Stigma</td>
<td>-.080**</td>
<td>-.147***</td>
<td>-.060*</td>
<td>--</td>
<td>--</td>
<td>--</td>
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</tr>
<tr>
<td>5. Depression</td>
<td>-.195***</td>
<td>-.208***</td>
<td>-.021</td>
<td>.377***</td>
<td>--</td>
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</tr>
<tr>
<td>6. Provider relationship</td>
<td>.114***</td>
<td>.000</td>
<td>.177***</td>
<td>-.173***</td>
<td>-.196***</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>7. Social support</td>
<td>.061*</td>
<td>.066*</td>
<td>.099***</td>
<td>-.322***</td>
<td>-.331***</td>
<td>.274***</td>
<td>--</td>
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</tr>
<tr>
<td>8. HIV treatment knowledge</td>
<td>.072*</td>
<td>-.080**</td>
<td>.255***</td>
<td>-.035</td>
<td>-.069*</td>
<td>.214***</td>
<td>.104***</td>
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</table>

| $N$                              | 1219  | 1107  | 1152  | 1159  | 1156  | 1162  | 1161  | 1162  |
| $M$                              | N/A   | N/A   | 4.05  | 1.97  | 1.86  | 2.19  | N/A   | 0.85  |
| $SD$                             | N/A   | N/A   | 0.74  | 0.75  | 0.77  | 1.27  | N/A   | 0.15  |
| $\infty$                         | N/A   | N/A   | 0.82  | 0.75  | 0.93  | N/A   | N/A   | 0.74  |

Note: *$p < .05$, **$p < .01$, ***$p < .001$; N/A = not applicable
Results - Structural Equation Modeling

Depression
Provider Relationship
HIV Treatment Knowledge
No Trauma

Health Care Empowerment

ART Adherence

Note. * p < .05; ** p < .01
Discussion - Implications

- Multilevel interventions are urgently needed among:
  - PLWH to increase knowledge about current HIV treatment options, decrease mental health concerns related to depression and trauma, and encourage health care empowerment
  - Providers to teach them how to promote health care empowerment among PLWH
Discussion - Limitations

- Generalizability
- Possibility of duplicate or false participant responses
- Social desirability or other reporting biases
- Cross-sectional design
Discussion - Future Directions

- Determine if higher health care empowerment scores among PLWH may predict improved long-term engagement and retention in care.

- Evaluate our model longitudinally and with different populations of PLWH to replicate and confirm our findings.
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Questions or comments?

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