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Resilience in Women with HIV: Relationships with Abuse History, Medication Adherence and HIV Viral Load

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General Background

- HIV in the US
- Medication Adherence
- Trauma, Abuse, and Health Outcomes
- Research trends
- “At promise” versus “at risk”

Resilience

- Resilience is the ability to function and cope adaptively in the face of or following adversities such as trauma and abuse (Connor and Davidson, 2003; Masten, Best, & Garmezy, 1990)

- Factors that may impact resilience (e.g. genetics and environment)(Dale et al.; Kjellstrand & Harper, 2012; Weber et al, 2009)

- Resilience as an outcome, process, and/or set of personal qualities (Bonanno, 2012; Luthar & Cicchetti, 2000; Connor & Davidson, 2003)

- Resilience has been largely understudied in relation to HIV health outcomes and medication adherence (Ickovics et al., 2006; O'Cleirigh, Ironson, Weiss, & Costa, 2007).

Aim of Study

- This study investigated how resilience related to medication adherence and HIV disease markers:
    - Highly active antiretroviral therapy (HAART) adherence
    - HIV disease markers
        - HIV viral load
        - CD4+ T cell count

Methods

Participants:

Recruited at the Women's Interagency HIV Study (WIHS) Chicago site at a bi-annual study visit.

Measures:

- Connor-Davidson Resilience Scale -10 item
  - Sample items: "I am able to adapt when changes occur" and " I believe I can achieve my goals, even if there are obstacles "
  - 0 (not true at all) to 4 (true nearly all the time) ; total scores 0 to 40
- Histories of Sexual Abuse, Physical Abuse, and Domestic Violence
- HAART adherence
  - Self-report, 0-100% over 6 month period since last visit, categorical variable (1= adherence rate >/= 95% and 0= less than 95% or not taking HAART when indicated)
- HIV disease markers

Sample demographics

Table 1 *Sample characteristics and socio-demographic statistics of 138 participants.*

Characteristics	Mean (*SD*)
Age	45.74 (8.38)
Resilience (CD-RISC)	28.82 (7.8)
	n (%)
Domestic Violence	86 (62.3)
Physical Abuse	104 (75.4)
Sexual Abuse	76 (55.1)
ART adherence (<95%)	38 (27.5)
Detectable viral load (≥ 20 copies/ml)	50 (36.2)
Below CD4 cutoff of 200	21 (15.2)
Race	
White / non-Hispanic	6 (4.3)
White / Hispanic	6 (4.3)
African-American / non- Hispanic	120 (87)
African-American / Hispanic	1 (.7)
Other / Hispanic	2 (1.4)
Asian / Pacific Islander	1 (.7)
Native American / Alaskan	1 (.7)
Other	1 (.7)
Education	
Grade 11 or less	60 (43.4)
Completed high school	38 (27.5)
Some college	33 (23.9)
Completed college	5 (3.6)
Attended/completed graduate school	2 (1.4)
Income	
$6,000 or less	30 (21.7)
$6,001-$12,000	64 (46.4)
$12,001 or more	42 (30.4)
Employed	25 (18.1)

Hypotheses

(1) Women scoring higher on resilience compared to women scoring lower on resilience would have higher medication adherence, undetectable viral loads, and CD4+ cell count above 200.

(2) Resilience would moderate the relationships between sexual abuse, physical abuse and domestic violence histories and medication adherence, detectable viral load, and lower CD4+ cell count.

Abuse histories would predict poor health outcomes (e.g. lower medication adherence, detectable viral loads, and CD4+ cell count below 200) only for women scoring low on resilience, but not for women scoring high on resilience.

Hypotheses continued…

(3) Sexual abuse, physical abuse, and domestic violence histories would relate to lower HAART medication adherence, detectable viral loads, and CD4+ cell count below 200.

(4) This study also explored whether sexual abuse, physical abuse, and domestic violence directly related to resilience scores.

Statistical Analyses

- SPSS version 21.0 was used to analyze the data with Pearson correlations and hierarchical multiple linear regressions.

- Covariates controlled in analyses were age, income, education, enrollment wave, and substance use.

Results

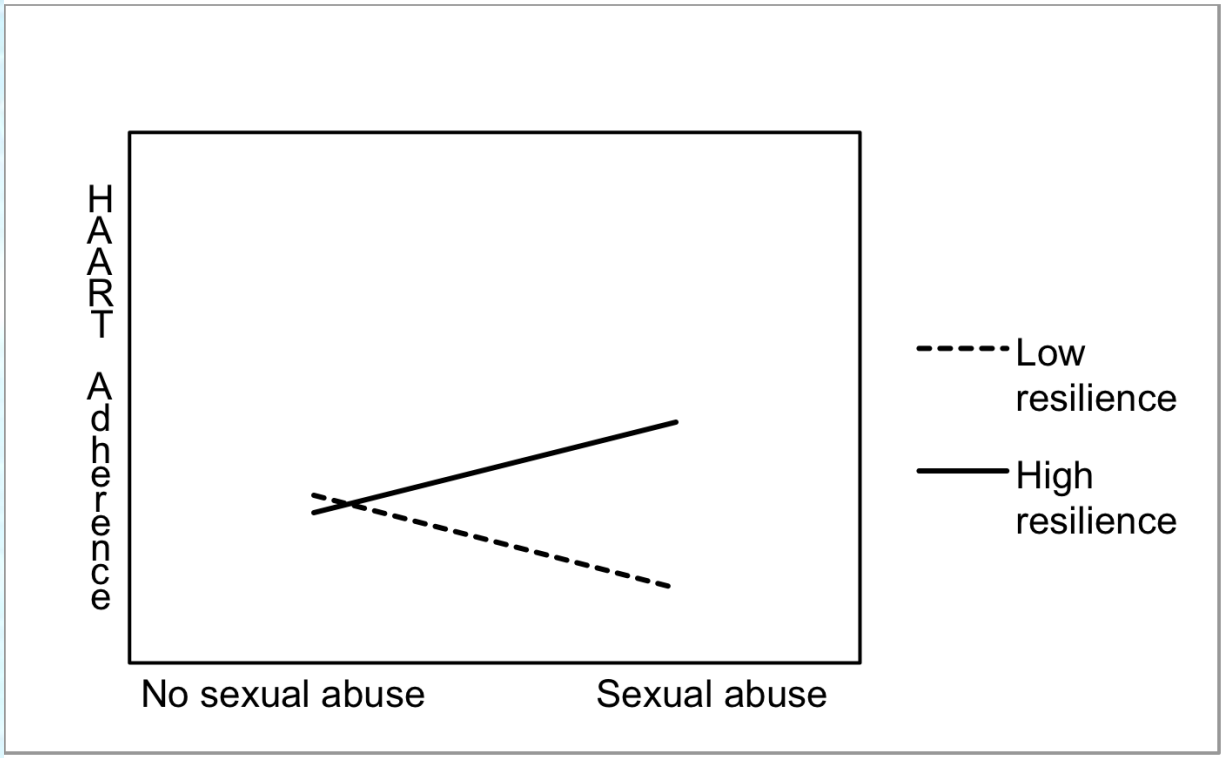
Hypothesis 1: Relationships between resilience, HAART adherence, and HIV disease markers

Findings showed that resilience was significantly negatively related to detectable viral load (β = -.22, t = -2.45, p = .02) and approached significance in positively relating to HAART adherence (β = .14, t = 1.68, p = .10).

Hypothesis 2: Resilience moderating relationships of abuse histories with HAART adherence and HIV disease markers

For the low resilience score group, sexual abuse significantly related to lower HAART adherence (β = -.39, t = -2.64, p = .02), but for the high resilience score group sexual abuse did not relate to HAART adherence.

Figure 1 *Regression lines for associations between sexual abuse and HAART adherence as moderated by resilience.*



Note: HAART= Highly active antiretroviral therapy.

Results continued…

Hypothesis 3: Relationships between abuse histories, HAART adherence, and HIV disease markers

- Results indicated that
  - –A history of domestic violence approached significance in associating with lower HAART adherence (β = -.15, t = -1.82, p = .07).
  - –No significant relationships between sexual or physical abuse and abuse composite score with HAART adherence or HIV disease markers.

Hypothesis 4: Exploratory Relationships between abuse histories and resilience

- None of the abuse variables significantly related to resilience.

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Conclusion & Implications

- Women with higher resilience are more likely to have undetectable viral loads and tended to be more likely to report taking their medications (Ickovics et al., 2006).

- Resilience moderated the impact of abuse history on HAART adherence (Wingo et al, 2010).

- Personal qualities captured by the CD-RISC may explain the findings (Campbell-Sills & Stein, 2007).

  "I am able to adapt when changes occur"

  "I think of myself as a strong person when dealing with life's challenges and difficulties"

- This speaks to the potential power of resilience in promoting HAART adherence for women with HIV who have histories of sexual abuse.

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