
 **19th Annual HIV CONFERENCE**
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**Personal Resilience: The Impact
on Health Outcomes of
Adolescents with Perinatally-
Acquired HIV/AIDS**

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Statement of the Problem

- A large number of youth with perinatally-acquired HIV infection are surviving into late adolescence and young adulthood
- They have more illness-related stigma, suffer social isolation, and are impacted by HIV-related central nervous system disease
- Compliance with medical regimens and adherence to medications is poor



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Statement of the Problem

- The age at death in recent years for this population is between
18 – 22
- Some youth and young adults maintain good disease management despite adversity



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Purpose of the Study

- **Children born with HIV/AIDS are surviving into late adolescence and young adulthood, and many have poor health outcomes**
- **Some youth live in strong, supportive environments and do well, while others do not**
- **Some youth live in chaotic, impoverished environments and do poorly, while others do not**



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Review of the Literature

- **Chronic illness**
- **Coping**
- **Adolescent development**
- **Personal resilience**



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Review of the Literature: **Chronic Illness**

- **Outcomes in the study of children and youth living with chronic illness are diverse**
- **The chronically-ill have a higher rate of emotional and social problems than their healthy peers**
- **Children living with cancer are as well-adjusted as their healthy peers**
- **Behavior problems in children with HIV/AIDS are not linked to their disease**



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Review of the Literature: **Coping**

- **Denial is not always maladaptive (Folkman, 1992)**
- **In research, the coping effort should be evaluated separately from outcomes (Folkman, 1992)**
- **Individual's response to a stressful event vs. it being a feature of their personality (Lazarus, 1993)**
- **Coping occurs around an adolescents personal & social resources, and life context (Moos, 2002)**
- **Adolescent coping: aided by environment, personal resources, social support, adaptation & resiliency, and other factors**



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Review of the Literature: Adolescent Development

Milestones

- **physical development (body maturation)**
- **social development (peer acceptance, dating, conformity)**
- **emotional development (identity formation)**
- **academic and career interests**



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Review of the Literature: Adolescent Development

- **Frequent hospitalizations, pain, school absences, limited social experiences**
- **Parent/guardian responses to the teen's illness shapes the adolescents response to his or her own illness**
- **Many youth with perinatal-HIV infection cannot or are delayed in achieving normal developmental milestones**



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Review of the Literature: Resilience

- Capacity within a person to endure hardship
- A common phenomenon having positive outcomes in spite of threats to adaptation or human development
- Risk (certain life events, genetic markers, character traits, environmental) and protective factors (mentors, family cohesion, strong peer/social supports)



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Personal Resilience

Construct of Personal Resilience:

- A personality trait that enhances individual adaptation (Wagnild & Young, 1993)
- The ability to cope with change or misfortune (Wagnild & Young, 1993)
- Curiosity, compassion with detachment, belief in survival, good memory, having goals, attracting and using support, resourcefulness, turning traumatic helplessness into learned helpfulness (Masten and Coatsworth, 1998)



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Scope of the Research

- To what degree is Personal Resilience present in HIV perinatally-infected youth?
- What were the correlational levels between Personal Resilience and Health Outcomes (as measured by CD4 counts and viral loads)?



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Research Question & Hypothesis

Is there a relationship between the level of personal resilience in HIV perinatally-infected youth, and health outcomes?

Null Hypothesis: There is no relationship between the level of personal resilience and health outcomes in HIV perinatally-infected youth

What demographic variables are associated with both personal resilience and health outcomes in HIV perinatally-infected youth?

Null Hypothesis: There is no association between the demographic variables and both personal resilience and health outcomes in HIV perinatally-infected youth.



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Study Design and Recruitment Strategy

- Exploratory, cross-sectional study
- Convenience sample of 153 youth ages 16 – 24
- 7 were not perinatally-infected, 2 were incarcerated, 3 had severe mental retardation, 3 lived in foster care, 3 had no FSIQ's, 58 had FSIQ's < 80.



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Recruitment Strategy

- 77 youth met the inclusion criteria and were approached for recruitment as they attended the weekly clinics, attended the weekly support group, or came to the office for other reasons
- 30 youth consented and were recruited into the study



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Study Measures: *Health Outcomes*

- CD₄ count (<200 - >500)
- HIV RNA-PCR (<400)



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Study Measures: *Personal Resilience Scale*

26 items on a Likert-scale, scores range
from 26 – 182 points

- ***personal competence*** (self-reliance, independence, determination, invincibility, mastery, resourcefulness, perseverance)
- ***acceptance of self and life*** (adaptability, balance, flexibility, and a balanced perspective on life)



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Family Environment Scale (Moos)

A 90-item instrument with true – false responses measuring three domains (ten subscales)

- **Interpersonal relationships:** cohesion, expressiveness, conflict
- **Personal Growth:** independence, achievement orientation, intellectual-cultural orientation, active-recreational orientation, moral-religious emphasis
- **System Maintenance:** organization and control



Data Analysis

Frequencies were run for the *demographic variables:*

- **Gender, Age, Ethnicity, SES, FSIQ, and Living with Whom**



Participant Characteristics: *Gender & Age*

- Male = 18 (60%)
Female = 12 (40%)
- Ages: 16 – 18 (6 / 20%)
19 – 21 (14 / 46.6%)
22 – 24 (10 / 33.4%)



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Participant Characteristics: *Ethnicity & Living with Whom*

- African American 14 / 46.6%
Haitian descent 8 / 26.7%
Hispanic descent 8 / 26.7%
- Family 24 / 80 %
Alone / with friends 5 / 16.7%
Homeless 1 / 3.3%



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Participant Characteristics: *Full-Scale Intelligence Quotient*

- **Low-average (80 – 90) = 15 (50%)**
- **Average (90 – 109) = 11 (36.7%)**
- **High-average (110 – 119) = 3 (10%)**
- **Superior (120 – 129) = 1 (3.3%)**



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Participant Characteristics: *Family SES*

- | | |
|---|--------------------|
| • Below poverty level: <100% (Less than \$10,830) | 10 / 33.3 % |
| • 100 – 135% (\$10,830 - \$60,505) | 6 / 20.0 % |
| • 136 – 150% (\$14,729 – \$67,179) | 0 / 0.0 % |
| • 151 – 200% (\$16,353 - \$89,424) | 7 / 23.5 % |
| • 201 – 250% (\$21,768 - \$111,669) | 1 / 3.3 % |
| • 251 – 300% (\$27,183 - \$133,914) | 4 / 13.3% |
| • 301 – 400% (\$32,598 - \$178,404) | 2 / 6.6% |
| • >400% (\$43,428 - \$178,405) | 0 / 0.0% |



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Participant Characteristics: *CD₄ & Viral Load*

CD₄ white blood cell count

- <200 cells/mm³ 10 / 33.3%
- 201 – 499 cells/mm³ 8 / 26.7%
- >500 cells/mm³ 12 / 40.0%

HIV viral load

- <400 copies 11 / 36.6%
- 401 – 10,000 copies 12 / 40.0%
- 10,001 – 50,000 copies 4 / 13.4%
- 50,001 – 100,000 copies 0 / 0.0%
- >100,001 copies 3 / 10.0%



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Data Analysis: FES

Frequencies were run on the *Family Environment Scale*

- **Interpersonal relationships:**
 - 63% reported high cohesion
 - 50% reported high expressiveness
 - 60% reported low conflict



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Data Analysis: FES

- **Personal Growth:**
 - 80% high independence
 - 93% high achievement oriented
 - 53% low intell-cultural orientation
 - 67% low recreational orientation
 - 67% high moral-religious orientation
- **System Orientation:**
 - 63% high organization
 - 67% high control



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Data Analysis: Personal Resilience

- **Low (26 – 77) 1 / 3 %**
- **Medium (78 – 129) 2 / 7**
- **High (130 – 182) 27 / 90%**



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Data Analysis

- T-test for equality of means were run between the I.V., the D.V.' s and demographic variables gender, in school and/or working or doing nothing: no statistically significant associations were found
- A one-way Analysis of Variance was performed between the I.V., the D.V.' s and demographic variables of ethnicity and culture, and SES: no significant effect was found



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Hypothesis Testing

Null Hypothesis: There is no relationship between the level of personal resilience and health outcomes in HIV perinatally-infected youth

		resiliency	viral load	CD ₄
resiliency	Pearson Correlation	1	-.549**	.049
	Sig. (2-tailed)		.002	.798
	N	30	30	30
viral load	Pearson Correlation	-.549**	1	-.484**
	Sig. (2-tailed)	.002		.007
	N	30	30	30
CD ₄	Pearson Correlation	.049	-.484**	1
	Sig. (2-tailed)	.798	.007	
	N	30	30	30



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Hypothesis Testing

Null Hypothesis: There is no association between the demographic variables and both personal resilience and health outcomes in HIV perinatally-infected youth

		resiliency	CD ₄	viral load	age	FSIQ
resiliency	Pearson Correlation	1	.069	-.556*	.114	-.169
	Sig. (2-tailed)		.728	.002	.565	.390
	N	30	30	30	30	30
CD ₄	Pearson Correlation	.069	1	-.493**	-.201	.403*
	Sig. (2-tailed)	.728		.008	.306	.034
	N	30	30	30	30	30
viral load	Pearson Correlation	-.556*	-.493**	1	.133	-.153
	Sig. (2-tailed)	.002	.008		.501	.436
	N	30	30	30	30	30
age	Pearson Correlation	.114	-.201	.133	1	-.220
	Sig. (2-tailed)	.565	.306	.501		.261
	N	30	30	30	30	28
FSIQ	Pearson Correlation	-.169	.403*	-.153	-.220	1
	Sig. (2-tailed)	.390	.034	.436	.261	
	N	30	30	30	30	30



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Findings and Conclusions

- Moderate relationship between high levels of personal resilience and lower levels of HIV viral load
- No relationship between personal resilience and CD₄ count
- No relationship between the I.V., D.V. and demographic variables, except for a small positive relationship between CD4 count and FSIQ (the lower the CD4 count the lower the FSIQ result)



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Study Limitations and Strengths

- **Small sample size limits generalizability of the outcomes and challenges the power of the statistical analysis**
- **Self-report responses involves a degree of bias**
- **80% of participants were ages 19 – 24 where adherence issues may be different than for those in younger age group**



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First study in which this concept of **Personal Resilience** is examined in this population



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Implications for Research

- **Continue study with larger sample to determine if findings are similar**
- **On-going monitoring of cognitive changes in this population will assist clinicians in utilizing appropriate approaches to assist with patient adherence issues**



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