Stress and Socioemotional Indices: An Analysis of Ugandan Children by Perinatal HIV Status

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Background

- Currently, 3.3 million children are living with HIV, with 90% of these children living in sub-Saharan Africa.
- Highly active antiretroviral therapies (HAARTs) access has led to improved survival rate of perinatally HIV infected children (PHIC).
- Increased focus on prevention of vertical transmission has also led to a rise in perinatally HIV exposed uninfected children (PHEUC).
- PHIC and PHEUC experience physical, psychological, and emotional stressors, as well as HIV and HAARTs exposure in utero.
- PHIC routinely interact with the medical system throughout their life, whereas PHEUC are discharged at 18 months from HIV-related care
- Although both groups experience similar stressors and HIV exposure in utero, lack of ongoing care for PHEUC leads to possible concern.
- In addition to child concerns, caregiver stress may also have an effect on pediatric development.

Hypotheses

- PHEUC will have deficits in socioemotional and psychosocial adjustment indices compared to both PHIC and HIV unexposed, uninfected children (HUUC).
- Across all groups, higher levels of caregiver stress will result in deficits in socioemotional adjustment.

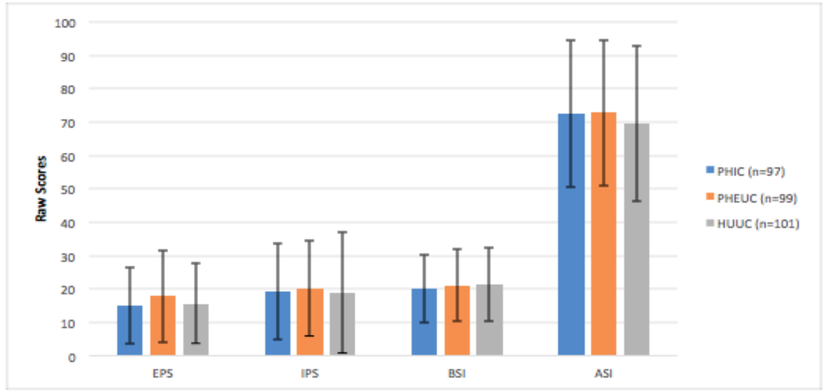
Methods

- PHIC, PHEUC, HUUC, (6-11 yrs) and their caregivers were recruited from Kawaala Health Center in Kampala, Uganda.
- Caregiver and child dyads (n=297) completed questionnaires:
  - Acute stress (past month)
  - Recent stressful life events (past 5 years) (caregiver only)
  - Lifetime stress (caregiver only)
  - Behavior Assessment System for Children (BASC) - socioemotional adjustment (caregiver only)
  - Vulnerability and Resilience Indices (VRI) - psychosocial adjustment (child only)
  - Demographic, behavioral, and socio-economic data
- All statistical analyses (ANOVA, chi-square tests, multivariable linear regression) were completed with SAS 2017 software.

Results

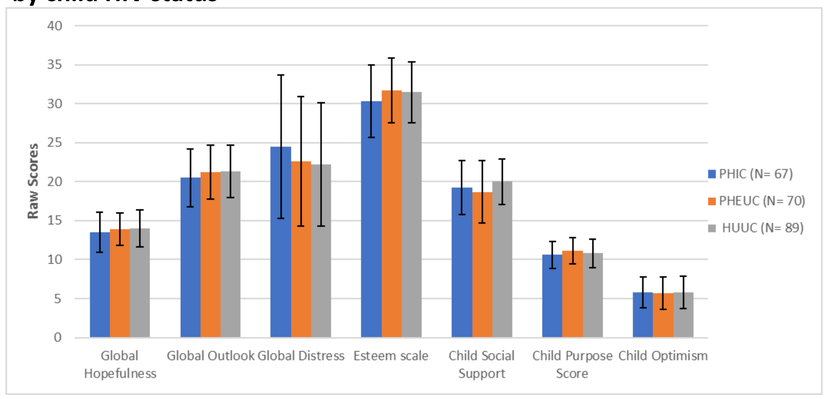
- Although there was no significant difference, PHEUC scored slightly higher on all four BASC domains (Figure 1).
- Higher scores in EPS[a], IPS[b], and BSI[c] indicates more problems in these areas, where as higher scores in ASI[d] indicates better adaptability.

Figure 1. Baseline Caregiver Report of Child Behavior using BASC, separated by child HIV status



- VRI found no significant difference in child behavior between the three groups in all seven domains (Figure 2).
- PHEUC had moderately higher esteem and purpose scores and lower social support compared to PHIC and HUUC.

Figure 2. Baseline Child Report of Child Behavior using VRI, separated by child HIV status

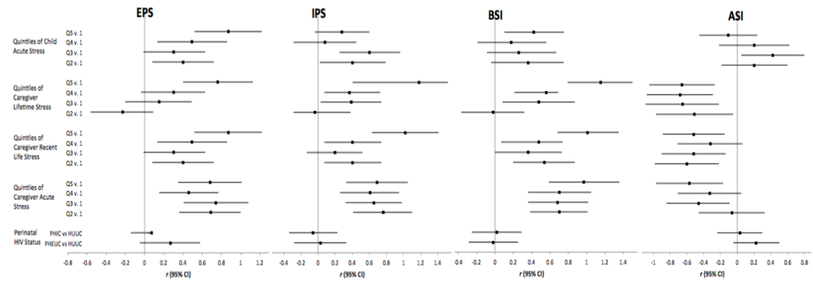


[a]Externalizing problem scores (EPS): hyperactivity, aggression, conduct problems
[b]Internalizing problem scores (IPS): anxiety, depression, somatization
[c]Behavioral symptoms index (BSI): attention problems, atypicality, withdrawal
[d]Adaptive skills index (ASI): adaptability, social skills, leadership

Results (Cont.)

- There was a dose dependent relationship in regards to caregiver stress and higher EPS, IPS, and BSI scores and lower ASI scores in children (Figure 3). Reported child stress was found to have had less of an impact on these socioemotional domains.

Figure 3. Caregiver and Child Stress as determinants of BASC domains



Conclusion and Future Work

- Contrary to our hypothesis, no differences were evident across groups on socioemotional or psychosocial adjustment indices.
- Higher stress in caregivers, however, was associated with deficits in socioemotional adjustment.
- Although there remains a need to understand potential behavioral and emotional deficits in PHIC and PHEUC populations, future studies must also focus on potential causes of caregiver stress social support in relation pediatric development.

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