Association Between Recent Intimate Partner Violence and Adherence to Anti-retroviral Therapy in HIV-positive Kenyan Women Engaged in Transactional Sex

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Background

- Intimate partner violence (IPV) by a regular male partner is associated with depression, unwanted pregnancy, HIV and other sexually transmitted infections (STIs), poor use of health care, and death.
- Most research on violence against women engaged in sex work in Africa focuses on clients and other casual sexual partners.
- It is unclear whether IPV is associated with increased risk of poor ART adherence in HIV-positive women in sex work, a key population for targeted HIV prevention and care strategies.
- ***Objective*: To evaluate whether IPV in the past year was associated with higher risk of poor adherence to ART in HIV-positive Kenyan women engaged in transactional sex**

Methods

A longitudinal analysis of the association between IPV in the past year and late ART refill in the past month

- Included data from women who were ≥16 years, HIV-positive, eligible for ART per Kenyan National Guidelines[1] and reported transactional sex in Mombasa, Kenya
- ***Exposure - Intimate partner violence (IPV) in the last year:*** Yes to ≥1 of 13 acts of physical, sexual, or emotional violence by the current or most recent regular partner (index partner) who was not a client.
  - Adapted the World Health Organization tool
  - Updated exposure status yearly
- ***Primary outcome – poor adherence to ART***: >48 hours late for a scheduled monthly ART refill visit.[2] Visits before ART initiation or after discontinuation were coded as late refill.
- ***Secondary outcomes*** - Self-reported adherence in the past month:
  - Validated self-rated adherence scale (binary <80%= "excellent/very good" vs. "good"/"fair/"poor")[3]
  - Visual Analogue Scale (VAS) <95% and <80%

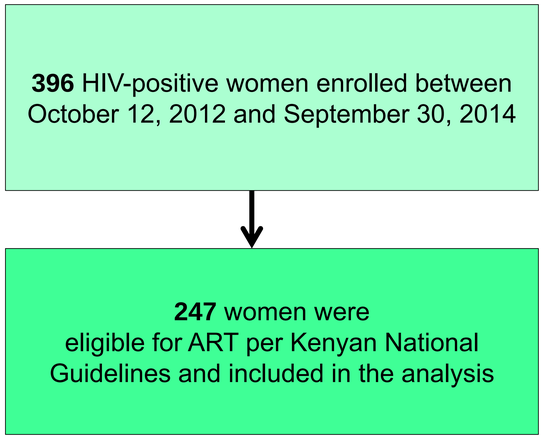
Analysis: GEE regression with log link, exchangeable correlation structure and robust standard errors was used to get relative risks (RR) and 95% confidence intervals (CI). Pre-specified confounding factors were age and education level. Exposure status was carried forward until next annual assessment.

- Other covariates tested in univariate regression analyses.

1.WHO Stage 3 or 4 or CD4 count <= 350 cells/mm^3 or on TB treatment
2. Graham et al., 2010 *Sex Trans Infect*
3. Lu 2008 *AIDS Behav*

Results

Figure 1. Flow chart of eligible participants



- **Total visits included in the analysis = 3,478**
- **Median visits per woman = 19 (IQR: 11,23)**
- **Median annual visits per woman = 2 (1,2)**

Table 1. Enrollment characteristics of participants (N=247)

Characteristic	N(%) or median (IQR)
Age (years)	40 (35, 45)
Highest education <=8 years	108 (43.7)
Duration of sex work (years)	11 (7,16)
Current or most recent regular partner (index partner)	193 (78.1)
Has a casual partner in last 3 months	89 (36.0)
Sexual abuse since age 15 by another person (n=246)	32 (13.3)
Physical abuse since age 15 by another person	85 (34.4)
Controlling behaviors by the index partner	104 (42.1)
Ever experienced intimate partner violence (IPV) by index partner	**85 (34.4)**
IPV in the past 12 months by index partner	**35 (14.2)**
Depressive symptoms in the past 2 weeks (PHQ9>5)	57 (23.1)
Alcohol problems in the past year by AUDIT score	
• No risk (no alcohol use)	147 (59.5)
• Minimal risk (1-6)	60 (24.3)
• Moderate risk (7-15)	35 (14.2)
• Severe (16 +)	5 (2.0)
On anti-retroviral therapy at our research clinic	194 (78.9)

AUDIT, Alcohol Use Disorders Identification Test; PHQ-9, Patient Heath Questionnaire 9; IPV, Intimate partner violence

Table 2. Unadjusted and adjusted associations between IPV in the past year and late ART refill in HIV-positive women in sex work

Outcome	IPV exposed visits	IPV unexposed visits	RR, 95% CI	aRR, 95% CI[1]
Late Refill (>48 hours)	102/530 (19.3)	756/2948 (25.6)	0.92 (0.76, 1.11)	0.87 (0.70, 1.07)
Self-rated adherence <80%	5/521 (1.0)	13/2661 (0.50)	1.96 (0.70, 5.46)	1.51 (0.50, 4.58)
VAS <95%	9/539 (1.7)	43/2840 (1.51)	1.03 (0.48, 2.21)	0.70 (0.31, 1.60)
VAS <80%	5/539 (0.93)	25/2840 (0.88)	1.02 (0.39, 2.65)	0.58 (0.22, 1.58)

[1] Adjusted for age (cubic spline) and education (<= 8 years vs. > 8). Adjusted model included 237 women and 3478 follow-up visits. IPV, Intimate partner violence, RR, Relative Risk, VAS, visual analogue scale.

- The 247 women contributed 346.1 person-years to the analysis. There were 530/3,478 (15.2%) IPV-exposed follow-up visits. Late ART refill occurred at 858/3,478 (24.7%) of these visits.
- IPV was not associated with a significantly higher risk of poor adherence by late refill or self-report (Table 2).
- Results were similar when visits where women refused or had stopped ART were excluded, and when analyses were restricted to visits with an index partner (data not shown).

Conclusion

- Recent IPV by a regular "emotional" partner and poor adherence by refill timing were common in this cohort of high-risk HIV-positive Kenyan women.
- We found no evidence that IPV was associated with a significantly higher risk of poor ART adherence by refill timing or self-reported measures.
- While IPV should be addressed in this key population, we may not expect reductions in IPV to be associated with improved ART adherence.

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