The tale of two epidemics: why violence prevention should be part of an HIV prevention response for young women

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SA AIDS, Durban, June 2015
Dedicated to the memory of a young FACTS 001 participant who was abducted and murdered early on in her participation in the trial
Outline

- Global burden of HIV and gender-based violence (GBV) amongst adolescent girls and young women (AGYW)

- GBV increases HIV risk

- GBV has marked impact on continuum of HIV prevention, treatment and care continuum

- Linking programme responses to HIV and GBV for AGYW
2.1 million adolescents are living with HIV.

Only group in which mortality has not decreased

Source: UNAIDS, 2013
One-third of new infections globally occur

Estimated number of new HIV infections per week among young women aged 15-24 years in East and Southern Africa, 2012

Data source: UNAIDS 2013

South Africa: 2363
Uganda: 570
Mozambique: 494
Tanzania: 491
Kenya: 468
Zimbabwe: 287
Malawi: 262
Zambia: 185
Lesotho: 110
Swaziland: 79
Ethiopia: 64
Botswana: 54
Namibia: 42
Rwanda: 25

Over 7,000 new HIV infections every week among young women globally
Increase in population susceptible to HIV

- 1.2 million people aged 10-19 years
  - one-fifth of global population

- By 2050, Sub-Saharan Africa is projected to have more adolescents than any other region
  - Growing population susceptible to infection
  - Need to increase prevention efforts to achieve Fast-track goals

Population of adolescents 10-19 years old in millions, by region, 1950-2010

Source: UNICEF, 2012
Globally 1 in 3 women (30%) will experience physical and/or sexual violence by an intimate partner.
High prevalence of past-year intimate partner violence, among ever-partnered women (15-19 years)

- Physical IPV
- Pressured or insisted on sex when unwanted
- Sexual IPV

• IPV and non-partner sexual violence associated with a range of poor health outcomes in this population and more generally

Source: Decker, 2014; Heise, 2014; Day, 2005
Young key populations experience high rates of partner violence and sexual assault

- **Sex workers**
  - Life time prevalence of any violence 45-75%
  - Young trafficked sex workers may experience rape to coerce them to sell sex

- **MSM**
  - First experience of forced sex during adolescence

- **PWID**
  - Sexual assault associated with drug use (own or partner)

Source: Delany-Moretlwe, 2015
Global burden of HIV and gender-based violence (GBV) amongst adolescent girls and young women (AGYW)

- GBV increases HIV risk
- GBV has marked impact on continuum of HIV prevention, treatment and care continuum
- Linking programme responses to HIV and GBV for AGYW
Violence against women is associated with incident HIV infection

### 1. Physical IPV and HIV infection among women

<table>
<thead>
<tr>
<th>Cohort studies</th>
<th>Weight</th>
<th>Risk Ratio M.H, Random, 95% CI</th>
<th>Risk Ratio M.H, Random, 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kouyoumdjian, 2013[56]</td>
<td>8.1%</td>
<td>1.18 [0.95, 1.47]</td>
<td></td>
</tr>
<tr>
<td>Van der Straten, 1998[53]</td>
<td>5.7%</td>
<td>1.32 [0.93, 1.86]</td>
<td></td>
</tr>
<tr>
<td>Subtotal (95% CI)</td>
<td>13.8%</td>
<td>1.22 [1.02, 1.46]</td>
<td></td>
</tr>
</tbody>
</table>

**Total events**
- Heterogeneity: $\chi^2 = 0.27, df = 1 (P = 0.60); I^2 = 0$
- Test for overall effect: $Z = 2.13 (P = 0.04)$

### 3. Any type of IPV and HIV infection among women

<table>
<thead>
<tr>
<th>Cohort studies</th>
<th>Weight</th>
<th>Risk Ratio M.H, Random, 95% CI</th>
<th>Risk Ratio M.H, Random, 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jewkes, 2010[35]</td>
<td>3.0%</td>
<td>1.52 [1.05, 2.20]</td>
<td></td>
</tr>
<tr>
<td>Kouyoumdjian, 2013[56]</td>
<td>3.8%</td>
<td>1.18 [0.96, 1.45]</td>
<td></td>
</tr>
<tr>
<td>Were, 2011[34]</td>
<td>2.8%</td>
<td>0.91 [0.59, 1.38]</td>
<td></td>
</tr>
<tr>
<td>Zablotska, 2007[40]</td>
<td>2.6%</td>
<td>1.80 [1.13, 2.88]</td>
<td></td>
</tr>
<tr>
<td>Subtotal (95% CI)</td>
<td>12.2%</td>
<td>1.28 [1.00, 1.64]</td>
<td></td>
</tr>
</tbody>
</table>

**Total events**
- Heterogeneity: $\tau^2 = 0.03; \chi^2 = 5.93, df = 3 (P = 0.12); I^2 = 49$
- Test for overall effect: $Z = 1.96 (P = 0.05)$
**Associations not only between violence and HIV, but also with unequal relationship power**

Incidence and relative incidence of HIV infection, by exposure to forms of violence and inequity

<table>
<thead>
<tr>
<th>Relationship power†</th>
<th>Number of seroconverters</th>
<th>Person-years</th>
<th>Incidence (per 100 person-years)</th>
<th>IRR (95% CI)</th>
<th>HSV2-adjusted IRR (95% CI)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medium or high equity</td>
<td>73</td>
<td>1334.7</td>
<td>5.5</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Low equity</td>
<td>51</td>
<td>601.3</td>
<td>8.5</td>
<td>1.55 (1.08-2.23)</td>
<td>1.54 (1.07-2.22)</td>
</tr>
<tr>
<td>Physical or sexual intimate partner violence‡</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None or one</td>
<td>83</td>
<td>1607.7</td>
<td>5.2</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>&gt;1 episode</td>
<td>45</td>
<td>469.0</td>
<td>9.6</td>
<td>1.80 (1.24-2.59)</td>
<td>1.69 (1.17-2.46)</td>
</tr>
<tr>
<td>Rape by a non-partner</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>121</td>
<td>1973.3</td>
<td>6.1</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Rape by a non-partner</td>
<td>7</td>
<td>103.4</td>
<td>6.8</td>
<td>1.11 (0.52-2.38)</td>
<td>0.98 (0.46-2.11)</td>
</tr>
</tbody>
</table>

*Source: Jewkes, Lancet 2010*

- 23% physical or sexual IPV, 5% rape by non-partner
- IPV more frequent in unequal relationships (29% vs. 22%)
- Rape not associated with incident HIV

- Increasing evidence for the associations between physical violence, verbal abuse, and male controlling behaviours (Kouyoumdjian, 2013; Durevall, 2014)
Direct and indirect pathways by which violence increases HIV risk

1. Direct effects of sexual violence
2. Common underlying risk factor = gender inequality
3. Indirect factor for risk
4. Violence as an outcome of HIV status

Source: WHO, 2013
Direct and indirect pathways by which violence increases HIV risk

Pathway 2: Indirect Transmission
- Psychological distress
  - Chronic anxiety
  - Depression
  - PTSD
  - Harmful alcohol and drug use
  - Increased risky sex
  - Multiple and concurrent partners
  - Transactional sex
  - Sex work
  - Harmful alcohol use
  - Reduced protective powers
  - Poorer sexual negotiation
  - More frequent sex
  - Less condom use
  - Reduced self-efficacy/self-esteem

Intimate partner violence
- Sexual violence
- Abuse in childhood
- Unequal power in relationship with partner
  - Controlling behaviours by partner
  - Reduced decision-making
  - Economic dependence
  - Reduced access to HIV information and services
  - Limited knowledge
  - Stigma
  - Fear of repercussions

Women’s increased risk for STI and HIV infection
- Decreased uptake of HIV prevention, treatment, care and support

Pathway 3: Direct transmission of HIV as a result of rape
- Clustering of risk among men who perpetrate violence
  - Harmful alcohol use
  - Multiple and concurrent partners
  - Less condom use
  - STIs including HIV infection

Biological plausibility
- Genital injury
- Frequency of forced sex
- Type of sex e.g. anal sex
- Presence of ectopy
- Partner viral load

Source: WHO, 2013
Direct and indirect pathways by which violence increases HIV risk

Source: WHO, 2013

- Biological mechanism?
Immunology of violence – emerging evidence

HIV infection is associated with inflammation and immune activation

- Genital injury and exposure to HIV/STI as a result of sexual violence can induce inflammation, immune activation

It might not all be about SEXUAL violence

Source: Klot, 2012; Ghosh, 2015;
Immunology of violence

HIV infection associated with inflammation and immune activation

- Genital injury and exposure to HIV/STI as a result of sexual violence can induce inflammation, immune activation

It might not all be about SEXUAL violence

- Physical abuse, emotional abuse associated with up/down regulation of host genital immunology immune responses
  
  - Women who experienced IPV were at increased risk of acquiring HIV with increasingly severe violence associated with increased risk of infection.
    
    - Higher rates of depression and lower T-cell function in women who experience chronic abuse.
    
    - PTSD associated with dysregulation of cortisol pathways, fight or flight responses.
  
  - Potentially important in the maturing genital tract of young women.

Source: Klot, 2012; Ghosh, 2015;
Lack of anti-herpes immune response in women physically and emotionally abused

Figure 1. Mean (SE) dilution of saliva capable of neutralizing herpes simplex virus type 1 in women. *;

p = 0.01.

Figure 2. Levels of HSV-1 sIgA

Source: Garcia-Linares, 2004
Global burden of HIV and gender-based violence (GBV) amongst adolescent girls and young women (AGYW)

- GBV increases HIV risk

- **GBV has marked impact on continuum of HIV prevention, treatment and care continuum**

- Linking programme responses to HIV and GBV for AGYW
Studies with HIV-positive Women

- Anticipated IPV is associated with refusing HIV testing
  - Stigma, fear of disclosure to partner major barrier to uptake of PMTCT ART
- Male involvement predicts better adherence to NVP
- Physical IPV lowers uptake of antenatal care
- History of violence decreases women’s breastfeeding

Studies with Pregnant Women

- Anticipated violence lengthens time to linkage to care
- History of physical or sexual IPV decreases ART uptake
- Current IPV is linked to poor ART adherence
- GBV associated with poor HIV outcomes
  - Lower CD4+ counts, increased virologic failure and OI

Source: Gourlay, 2013; Hatcher, 2013
Potential impact violence or fear of violence on PrEP uptake and adherence

Molina, CROI 2015; McCormack, CROI 2015; Baeten, 2012; Thigpen, 2012; Grant, 2010; Karim, 2010; van Damme, 2012; Marrazzo, 2014; Rees, 2015
Oral PrEP: Male partners influence uptake and use in young African women

VOICE:
- 50% (TDF-FTC) – 58% (TDF) of participants in nested cohort had no drug detected at any visit

VOICE-C – qualitative data
- Male partners’ understanding/support of the trial and study products had a significant influence on women’s use of PrEP
  - Concerns about potential stigma led to concealed use of study products and lower adherence;
  - ART use perceived to be associated with HIV illness by male partners; unintentional disclosure occasionally led to relationship conflicts

Source: Marrazzo, 2015; Montgomery, 2014; van der Straten, 2014a; van der Straten, 2014b
Microbicides: Fear of violence influenced women’s decisions to disclose trial participation and gel use

**MDP 301**
- Male partners were perceived as authoritarian, controlling and suspicious and were often perpetrators of IPV.
- Fear of violence influenced women’s decisions to disclose trial participation and gel use, but attempted concealment of gel use further led to relationship strain.

**CAPRISA 004**
- In CAPRISA 004, a third of women expressed fear of disclosing gel use and trial participation.
- Non-disclosure / attempted concealment of gel use was associated with greater difficulty with gel use.
- In contrast, disclosure of gel use to partners was associated with modest (14%) increases in adherence.

Sources: Stadler, 2014; Succop, 2014; Mngadi, 2014
Trials ≠ “real life”

What PrEP-takers say PrEP offers
- Decreased anxiety
- Increased communication, disclosure, trust
- Increased self-efficacy
- Increased sexual pleasure & intimacy

Sex workers
- Fear of violence may motivate PrEP use

Need to understand how young women will incorporate oral PrEP into their every day lives

Source: Gilmore, 2014; Ware, 2012; Ware 2014; Eakle, personal communication
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GBV increases HIV risk

GBV has marked impact on continuum of HIV prevention, treatment and care continuum

Linking programme responses to HIV and GBV for AGYW
Rationale for a health sector response

- Abused women more likely to seek health services
- Most women attend health services at some point, especially sexual and reproductive health
- If health workers know about a history of violence they can give better services for women
  - Identify women in danger before violence escalates
  - Provide appropriate clinical care
  - Reduce negative health outcomes of VAW
  - Assist survivors to access help / services / protections
  - Improve sexual, reproductive health and HIV outcomes
- Human rights obligations to the highest standard of health care

Source: Garcia-Moreno, 2014
The health sector has a responsibility to respond to violence, and global guidelines already exist.

Prevention of violence against women and girls – what does the evidence say?

Low-middle income countries

- Men and boys social norms programming
- Economic empowerment & income supplements

Conflicting

- One stop crisis centres
- Women’s police stations
- ICT services
- Social marketing campaigns
- Alternative rites of passage
- Home visitation/health worker outreach
- Infrastructure/transport

Insufficient evidence

Promising

- Awareness-raising campaigns
- Retraining for traditional exercisors
- Personnel training

- Community mobilization
- Empowerment training for women and girls
- Group training for women and men
- Economic empowerment & income supplements + gender equality training

Source: Ellsberg, 2014
Effectiveness of an integrated intimate partner violence and HIV prevention intervention in Rakai, Uganda: analysis of an intervention in an existing cluster randomised cohort

Jennifer A Wagman, Ronald H Gray, Jacquelyn C Campbell, Marie Thoma, Anthony Ndyanabo, Joseph Ssekasanvu, Fred Nalugoda, Joseph Kagaayi, Gertrude Nakigozi, David Serwadda, Heena Brahmbhatt

<table>
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<tr>
<th>Strategies</th>
<th>Target population and output</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advocacy</td>
<td>Leaders, officials, and policy makers informed about IPV and women’s rights and given opportunity to discuss and make decisions</td>
<td>Public policies made to prevent IPV. More resources allocated to screening, treating, and preventing violence</td>
</tr>
<tr>
<td>Capacity building</td>
<td>Police, social welfare officers, health-care providers, teachers, local and religious leaders, SHARE staff, and volunteers completed CAC on IPV prevention</td>
<td>Leaders and key individuals or groups have knowledge about IPV, its causes and consequences, understand human rights, and have skills to advocate for women’s rights</td>
</tr>
<tr>
<td>Community activism</td>
<td>Community volunteers (n=40) appointed and trained as SHARE ambassadors; IPV watch groups and community action groups formed; village meetings and forums held</td>
<td>Community members change their own behaviours (to prevent IPV) and attitudes (to reject IPV as acceptable and hold women to the same standard as men)</td>
</tr>
<tr>
<td>Learning materials</td>
<td>Booklets, brochures, posters, story cards, and other materials developed and disseminated</td>
<td>Community members have knowledge about IPV and why it is a public health concern</td>
</tr>
<tr>
<td>Special events</td>
<td>Community-based fairs, marches, campaigns, and poster shows; violence prevention newsletters created and disseminated to entire community</td>
<td>Ideas about IPV prevention and gender norms have been publicly discussed and explored throughout community</td>
</tr>
</tbody>
</table>
Effectiveness of an integrated intimate partner violence and HIV prevention intervention in Rakai, Uganda: analysis of an intervention in an existing cluster randomised cohort

Jennifer A Wagman, Ronald H Gray, Jacquelyn C Campbell, Marie Thoma, Anthony Ndyanabo, Joseph Ssekasavu, Fred Nalugoda, Joseph Kagaayi, Gertrude Nakigozi, David Serwadda, Heena Brahmbhatt

<table>
<thead>
<tr>
<th></th>
<th>Control</th>
<th>Intervention</th>
<th>Comparisons</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Incident cases (person-years)</td>
<td>Incident cases (person-years)</td>
<td>IRR (95% CI); aIRR† (95% CI); p value</td>
</tr>
<tr>
<td></td>
<td>Participants*</td>
<td>Participants*</td>
<td>p value</td>
</tr>
<tr>
<td></td>
<td>Incident cases per 100 person-years</td>
<td>Incident cases per 100 person-years</td>
<td></td>
</tr>
<tr>
<td>Women</td>
<td>71 (6154)</td>
<td>56 (5649)</td>
<td>0.86 (0.61-1.22); p=0.396</td>
</tr>
<tr>
<td></td>
<td>2038</td>
<td>1925</td>
<td>0.99</td>
</tr>
<tr>
<td></td>
<td>1.15</td>
<td>1.13</td>
<td>0.62 (0.39-0.99); p=0.045</td>
</tr>
<tr>
<td>Men</td>
<td>48 (4237)</td>
<td>27 (3861)</td>
<td>0.76 (0.58-1.01); p=0.057</td>
</tr>
<tr>
<td></td>
<td>1435</td>
<td>1326</td>
<td>0.70</td>
</tr>
<tr>
<td></td>
<td>1.13</td>
<td>1.15</td>
<td>0.70</td>
</tr>
<tr>
<td>Overall</td>
<td>119 (10390)</td>
<td>83 (9510)</td>
<td>0.87</td>
</tr>
<tr>
<td></td>
<td>3473</td>
<td>3251</td>
<td>0.87</td>
</tr>
</tbody>
</table>

IRR=incidence rate ratio, aIRR=adjusted incidence rate ratio. *Participants who contributed to the person-year calculation. †Adjusted for baseline HIV prevalence by trial group, baseline age, baseline education, baseline marital status, and circumcision status of men or primary male partner of female respondents.

• Exposure to SHARE was also associated with significant:
  • Reductions in past year sexual IPV, physical IPV and forced sex as reported by women
  • Increases in disclosure of HIV results
Conclusions

- HIV and violence against women and girls are widespread, particularly in high HIV prevalence settings.

- Young women are exposed to multiple, overlapping forms of violence which increase their risk for HIV.
  - Not just sexual violence.

- We need a health sector response to violence which is evidence-based if we are to achieve HIV targets.

- While the evidence base is small, promising approaches suggest that it is possible to achieve reductions in violence and HIV within programmatic timeframes.
“There is no policy for progress more effective than the empowerment of women and girls. Study after study has taught us that no other policy is as likely to raise economic productivity, or to reduce infant and maternal mortality. No other policy is as sure to improve nutrition and promote health -- including the prevention of HIV/AIDS...”

Kofi Annan, 2005
Acknowledgements

- **Wits RHI**
  - D Baron, A Hatcher, S Mullick, J Stadler, H Rees

- **STRIVE**
  - C Watts, L Heise, A Stangl, S Lees, S Kapiga

- **Greentree II participants**
  - C Wira, M Ghosh, J Auerbach, J Wagman
EMPOWER

Improved combination prevention (including PrEP) for adolescent girls and young women in Tanzania and South Africa

• To evaluate the feasibility, acceptability and additional benefits of combining GBV and stigma reduction activities within an oral PrEP programme for young women aged 16-24 years

Funded by DFID for 2.5 years through Evidence for HIV Prevention in Southern Africa