The Price of Selling Sex: HIV among Female Sex Workers — the Context and Public Health Response

Euphemia Sibanda on behalf of Frances Cowan
• Global epidemiology of female sex work (FSW)

• Effective combination HIV / STI prevention care programmes

• Novel biomedical approaches are being evaluated

• Case Study from Zimbabwe
• Global epidemiology of female sex work

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Systematic review of size estimation of FSW populations globally

<table>
<thead>
<tr>
<th>Region</th>
<th>FSW prevalence (range)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sub Saharan Africa</td>
<td>0.7% - 4.3%</td>
</tr>
<tr>
<td>Capital cities</td>
<td>0.4% - 4.3%</td>
</tr>
<tr>
<td>Other Urban areas</td>
<td>0.6% - 9.1%</td>
</tr>
<tr>
<td>Transactional sex – DHS</td>
<td></td>
</tr>
<tr>
<td>Asia</td>
<td>0.2% - 2.6%</td>
</tr>
<tr>
<td>Ex Russian Federation</td>
<td>0.1% - 1.5%</td>
</tr>
<tr>
<td>Eastern Europe</td>
<td>0.4% - 1.4%</td>
</tr>
<tr>
<td>Western Europe</td>
<td>0.1% - 1.4%</td>
</tr>
<tr>
<td>Latin America &amp; Caribbean</td>
<td>0.2% - 7.4%</td>
</tr>
</tbody>
</table>

Vandepitte et al STI 2006
Meta-analysis of the increased burden of HIV experienced by FSWs

<table>
<thead>
<tr>
<th>Region (n countries)</th>
<th>N of FSWs</th>
<th>% FSWs with HIV*</th>
<th>% HIV+ve in general population</th>
<th>Pooled OR (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asia (14)</td>
<td>64,224</td>
<td>5.2 %</td>
<td>0.18</td>
<td>29.2 (22.2–38.4)</td>
</tr>
<tr>
<td>Eastern Europe (4)</td>
<td>3,037</td>
<td>10.9%</td>
<td>0.20%</td>
<td>n/a</td>
</tr>
<tr>
<td>LA &amp; C (11)</td>
<td>10,237</td>
<td>6.1%</td>
<td>0.38%</td>
<td>12.0 (7.3–19.7)</td>
</tr>
<tr>
<td>ME and N Africa (5)</td>
<td>959</td>
<td>1.7%</td>
<td>0.43%</td>
<td>n/a</td>
</tr>
<tr>
<td>SS Africa (16)</td>
<td>21,421</td>
<td>36.9%</td>
<td>7.42%</td>
<td>12.4 (8.9–17.2)</td>
</tr>
</tbody>
</table>

* pooled estimate

World Bank 2012
HIV Burden among FSWs – how does this influence epidemics more generally?

- FSWs bear a disproportionate burden of HIV worldwide - 13.5 times more likely to be HIV +ve than general population (Baral et al Lancet 2013)

- Modes of Transmission studies suggest small proportion of new infections attributable to sex work in generalized epidemics (Gouws et al STI 2012)

Modes of transmission in Zimbabwe
Modes of transmission studies likely underestimate the population attributable fraction of FSW over the longer term within generalised epidemics.

Mishra et al. PlosOne 2014; Boilly et al. 2014 JAIDS
Looking upstream to prevent HIV transmission: can interventions with sex workers alter the course of HIV epidemics in Africa as they did in Asia?
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Systematic reviews to assess evidence of what works

- Priority interventions to reduce HIV transmission in sex work settings in sSA
  - Chersich MF et al. JIAS 2013, 16:17980
- Lancet ‘HIV and Sex Workers’ Supplement July 2014
  - Influence of structural determinants
    - Shannon et al
  - Evidence for combination prevention
    - Bekker et al
  - Evidence to support community empowerment
    - Kerrigan et al
- ART uptake, retention, attrition and adherence
The Global Epidemiology of HIV among Female Sex Workers: The Influence of Structural Determinants

Potential impact of scaling up structural interventions

• Elimination of sexual violence alone due to immediate and sustained impact could avert 17-20% of HIV infections over next decade

• Decriminalization of sex work could have the largest impact on the course of HIV epidemics across all settings averting 33-46% of incident HIV infections over next decade among FSWs and clients

“Raping of sex workers is one of the fringe benefits attached to night patrol. We used to lobby for night patrol duties.”

Police Officer in the Ikeja Police Station, Lagos

Salaudeen The Nation 2011
Combination HIV prevention for Female Sex Workers: What is the evidence?

Linda-Gail Bekker, Leigh Johnson, Frances Cowan, Cheryl Overs, Donela Besada, Sharon Hillier, Ward Cates Jnr.
Tailored combination prevention

• Effective prevention requires knowledge of SW setting and environment
• Recognises SW autonomy and freedom to choose
• Has full involvement of peers in design and implementation
• Employs a layered combination approach
• Includes careful monitoring and evaluation to measure impact and also any unanticipated harms....
Prevention framework

- Environment
- Public policy
- Community
- Peers
- Individual
Prevention framework

Environment

Public policy

Community

Peers

Individual

prevalence / incidence of HIV and other STI, gender attitudes / norms, religious influences,
Prevention framework

Environment

Public policy

Community

Peers

Individual

- gender attitudes / norms, religious influences, prevalence/incidence of HIV and other STI
- legal structures, access to social and health services, justice system
Environment

Public policy

Community

Peers

Individual

gender attitudes / norms, religious influences, prevalence/incidence of HIV and other STI

legal structures, access to social and health services, justice system

types of sex work, relationships with local authorities, risk profile and behaviour of clients
Prevention framework

Environment
- gender attitudes / norms, religious influences, prevalence/incidence of HIV and other STI
- legal structures, access to social and health services, justice system

Public policy
- types of sex work, relationships with local authorities, risk profile and behaviour of clients

Community
- social support, reinforcement of positive norms

Peers

Individual
Prevention framework

Environment
- gender attitudes / norms, religious influences, prevalence / incidence of HIV and other STI
- legal structures, access to social and health services, justice system

Public policy
- types of sex work, relationships with local authorities, risk profile and behaviour of clients

Community
- social support, reinforcement of positive norms

Peers

Individual
- risk perception, knowledge, condom and treatment self-efficacy, GBV, drug and alcohol
Structural, social justice and human rights

Biomedical – ART and non ART

Behavioural
Established Interventions

- Condoms and lubricant
- STI treatment
- Contraception
- Harm reduction for SW-who inject drugs
- Community empowerment
- Peer education
- Violence reduction
Community empowerment

• **Community empowerment-based response to HIV:** a process by which sex workers take collective ownership of programs to achieve the most effective HIV outcomes and address social and structural barriers to health & human rights

• It has been a UNAIDS Best Practice for more than a decade
Implementation

• Community empowerment often starts with the promotion of internal **social cohesion** and ensuring a safe space to gather

  • Mobilization of **collective power** and action to address the social and structural context of HIV risk

  • **Sex worker participation** in processes to influence access to **material resources**
Effectiveness

• Nested **systematic review and meta-analysis (n=30,325 from 22 studies)** from low- and middle-income countries

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Pooled Odds Ratio</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIV</td>
<td>0.68</td>
<td>0.52, 0.89</td>
</tr>
<tr>
<td>Gonorrhea</td>
<td>0.61</td>
<td>0.46, 0.82</td>
</tr>
<tr>
<td>Chlamydia</td>
<td>0.74</td>
<td>0.57, 0.98</td>
</tr>
<tr>
<td>High-titre syphilis</td>
<td>0.53</td>
<td>0.41, 0.69</td>
</tr>
<tr>
<td>Consistent condom use with:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>All clients</td>
<td>3.27</td>
<td>2.32, 4.62</td>
</tr>
<tr>
<td>New clients</td>
<td>3.03</td>
<td>1.89, 4.86</td>
</tr>
<tr>
<td>Regular clients</td>
<td>2.90</td>
<td>2.22, 3.78</td>
</tr>
</tbody>
</table>

Kerrigan et al   Lancet 2015
WHO guidance 2014

The comprehensive package

**Essential health sector Interventions**
1. Comprehensive condom and lube program
2. Harm reduction for substance use
3. Behavioural interventions
4. HIV testing and counselling
5. HIV treatment and care
6. Sexual and Reproductive Health programs
7. Prevention / management of co-morbidities

**Essential strategies for an enabling environment**
1. Supportive legislation, policy and financial commitment
2. Addressing stigma and discrimination
3. Community empowerment
4. Addressing violence against SWs
Young women who sell sex

- Under researched
- Substantial minority report starting sex work <18 years
- < 18 = sexually exploited
- Increased risk of HIV & STIs
- Poor negotiation skills
  - Less consistent condom use
  - Increased risk of gender-based violence
- Increased risk of poor mental health
  - Increased suicide attempts
  - Increased substance use
- Increased biological susceptibility
- Able to attract more clients
- Maintain longer working hours
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Newer Interventions

- Post Exposure Prophylaxis services
  - Sexual assault, unintended exposures
- Pre Exposure Prophylaxis services
  - Oral (PrEP)
  - Topical (microbicides)
- FSW HIV care and treatment:
  - Antiretroviral treatment services
  - Prevention of vertical transmission
<table>
<thead>
<tr>
<th>Clinical trial</th>
<th>Gender</th>
<th>SW</th>
<th>Drug detection in blood and vaginal samples from non-seroconverters</th>
<th>HIV protection estimate as related to high adherence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Partners PrEP (oral)</td>
<td>M/F</td>
<td>X</td>
<td>81%</td>
<td>86-90%</td>
</tr>
<tr>
<td>TDF2 (oral)</td>
<td>M/F</td>
<td>X</td>
<td>79%</td>
<td>78%</td>
</tr>
<tr>
<td>FEM-PrEP (oral)</td>
<td>F</td>
<td>TS (12.6%)</td>
<td>26% at two visits</td>
<td>Too low</td>
</tr>
<tr>
<td>Global iPrEx (oral)</td>
<td>MSM/TG</td>
<td>TS (41%)</td>
<td>51%</td>
<td>92%</td>
</tr>
<tr>
<td>Bangkok Tenofovir (oral)</td>
<td>M/F IDU</td>
<td>SW/TS partners (38%)</td>
<td>66%</td>
<td>74%</td>
</tr>
<tr>
<td>VOICE (oral and topical)</td>
<td>F</td>
<td>TS (6.1%)</td>
<td>50% had no detectable levels</td>
<td>Too low</td>
</tr>
<tr>
<td>CAPRISA 004 (topical)</td>
<td>F</td>
<td>TS (1.9%)</td>
<td>(TS= Transactional sex)</td>
<td>54% in high adherents</td>
</tr>
</tbody>
</table>
Systematic review of ART uptake, retention, attrition and adherence among FSWs

- 39 studies globally
- Current ART use among HIV infected FSWs 38% (95% CI: 29%–48%, 15 studies)
- Ever ART use higher in HIC than LMIC 80% cv 36%
- LTFU 6% (95% CI: 3%–11%, 3 studies)
- Adherence 76% (95% CI: 68%–83%, 4 studies)
- Of those on ART, proportion with virological suppression 58% (95% CI: 46%–68%, 4 studies)

Mountain et al PLoS One 2014
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SISTERS WITH A VOICE
Background

- Situational analysis commissioned by National AIDS Council, IOM, UNAIDS and UNFPA 2007
- Recommendations given led to establishment of the SW Program ‘Sisters with a Voice’
- Embedded within NAC’s National Behaviour Change Programme
Initially in five sites – providing two models of care - expanded in 2013 to 36 sites nationally

Developed in close consultation with SWs and other stakeholders following a situational analysis by NAC

- Clinical services
- Health education
- Supported by 170 peer educators (50% paralegals)
- Participatory group meetings to support social cohesion and community empowerment
End of 2014

- >24,000 women seen
- >60,000 visits
- >20,000 STIs treated
- >7500 HIV tests
- >3,200 women diagnosed HIV positive and referred for ART services

- >1.4 million (M), >96,000 (F) condoms distributed in 2014
Analysis of programmatic data

• > 13,000 women

• 10 new infections per 100 person years of follow-up

Hargreaves et al submitted 2015
Cluster randomised trial of enhanced ART prevention and treatment – including PrEP
Goal: to reduce the prevalence of all FSWs with a detectable HIV viral load, >1,000 copies/ml
Conduct baseline survey using RDS in 14 outreach sites
Recruit ≈ 200 SWs per site (total n=2,800)

Random allocation of 7 matched sites to intervention arms

**Usual Care Sites**
- Health education, HTC
- Referral to government
- HIV care services as needed,
- Syndromic STI
- Contraception,
- Condoms
- Cervical Ca screening,
- Legal advice

**SAPPH-IRe Ix Sites**
Usual care plus:
- HIV negatives
  - Repeat HTC, Offer of PrEP
- HIV positives
  - PoC CD4; On site ART
- Intensified community mobilisation with SMS adherence support
- Adherence sisters program

Process Evaluation
Program data collection

After 18 months conduct endline survey using RDS in all 14 sites. Recruit ≈ 200 SWs per site (total n=2,800)
HIV prevalence among SWs at baseline at 14 trial sites

Overall HIV prevalence 57.5% (95% CI 42.8-79.2)

<table>
<thead>
<tr>
<th>Age</th>
<th>n</th>
<th>% (min and max) *</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-24</td>
<td>233/655</td>
<td>36% (14-59%)</td>
</tr>
<tr>
<td>25-29</td>
<td>372/665</td>
<td>57% (38-76%)</td>
</tr>
<tr>
<td>30-39</td>
<td>649/948</td>
<td>67% (43-91%)</td>
</tr>
<tr>
<td>&gt;40</td>
<td>345/440</td>
<td>79% (57-97%)</td>
</tr>
<tr>
<td>Total</td>
<td>2722</td>
<td>100</td>
</tr>
</tbody>
</table>

* percents are RDS weighted and means of site values
Cascade of care at the 14 SAPPH-IRe sites

Additional 15.8% with viral suppression but reporting not on ART

Proportion HIV positive women

HIV positive: 100%
Know positive: 64.0%
On ART: 43.3%
Virally suppressed: 33.7%
Cascade of care for HIV +ve sex workers a) <25 years b) ≥ 25 years

(a) Sex workers <25 years of age
- 100% HIV positive
- 39% know positive
- 21% on ART
- 13% virally suppressed

Additional 16% virally suppressed not on ART

(b) Sex workers ≥25 years of age
- 100% HIV positive
- 69% know positive
- 48% on ART
- 37% virally suppressed

Additional 16% virally suppressed not on ART
In summary

Global epidemiology of female sex work
- FSWs at 13.5 times risk of HIV than general population counterparts
- Resources for HIV prevention need to reflect their vulnerability

Effective combination HIV prevention & care programmes
- Condoms, contraception, violence prevention and community mobilisation have likely already had an important impact

Novel biomedical approaches should be taken to scale alongside existing prevention and care
- PEP, PrEP, microbicides, Treatment as prevention
Proper inclusion of sex workers and other key populations is essential to reach 90: 90: 90.

The principles of good public health demand that we strive to reach all affected populations with core HIV services even when facing difficult cultural contexts, severe stigma and discrimination, or challenging security environments.

Ambassador Birx May 2014
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