Lessons from the Broad Street Pump: The importance of addressing structural factors that drive HIV

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STRIVE Research Symposium
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Disease determinants

- Factor: Biological, Behavioural, Social
- Intervention: Bio-medical, Educational, Structural

Source: Adapted from Jim Thomas, Measure Evaluation
Structural interventions

(behavioral) High Personal Volition Low (structural)

HIV “Have fewer partners” Improve livelihoods
     (to reduce transactional sex)

Obesity “Exercise more” Create walkable neighbourhoods

Hazardous drinking “Drink responsibly” Regulate alcohol advertising and promotion

Source: Adapted from Jim Thomas, Measure Evaluation
Stemming the tide of cholera
London 1854

John Snow,
Father of modern epidemiology
The historical decline of TB deaths in England and Wales 1848-1961

McKeown T, Record RG, Turner RD Population Studies 1975

Source: Paul Pronyk
STRIVE: Tackling the factors that create vulnerability and undermine HIV prevention and treatment.
Designed around 4 research themes

- **Theme 1:** Deepening fundamental understanding of structural factors and pathways
- **Theme 2:** Evaluating the impact and cost-effectiveness of structural interventions
- **Theme 3:** Advancing methods for evaluating structural interventions; and
- **Theme 4:** Enhancing insights into processes of change
Conceptual framework

MACRO LEVEL

Structural Drivers

Proximate Determinants of Risk

- Criminal Justice
- Laws Rights
- Culture & Religion
- Media
- GDP Economics
- Corporate & Tax policy
- Politics

Criminalization of behaviours
Stigma
Gender Norms
Economic Opportunity
Mobility
Alcohol Availability

Violence
Alcohol Use

Access to Info & Services
Partner selection
Partner change
Unprotected Sex

HIV transmission

Structural Interventions
**Evidence of Impact: Partner violence**

3 prospective studies link IPV with Incident HIV or STI

<table>
<thead>
<tr>
<th>Relationship power scale</th>
<th>IRR (95% CI)</th>
<th>p value</th>
<th>HSV2-adjusted IRR (95% CI)*</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medium or high equity</td>
<td>1.00</td>
<td>--</td>
<td>1.00</td>
<td>--</td>
</tr>
<tr>
<td>Low equity</td>
<td>1.51 (1.05-2.17)</td>
<td>0.027</td>
<td>1.51 (1.05-2.17)</td>
<td>0.027</td>
</tr>
<tr>
<td>Physical or sexual intimate partner violence</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None or one</td>
<td>1.00</td>
<td>--</td>
<td>1.00</td>
<td>--</td>
</tr>
<tr>
<td>&gt;1 episode</td>
<td>1.65 (1.13-2.40)</td>
<td>0.009</td>
<td>1.51 (1.04-2.21)</td>
<td>0.032</td>
</tr>
</tbody>
</table>

IRR = incidence rate ratio. HSV2 = herpes simplex virus type 2. IRRs adjusted for age, treatment, stratum, and person-years of exposure. *Additionally adjusted for HSV2 infection at baseline.

*Strongest data comes from South Africa: Jewkes et al, *The Lancet*, 2010;*  
Cross-sectional data more mixed; methodological limitations  
Consistent association found between more severe IPV and HIV risk
Evidence of Impact:
Livelihood options, transactional sex & HIV

- 2 longitudinal studies; 1 RCT link transactional sex to incident HIV*
- Cohort study, embedded in intervention trial, enrolled 1077 sexually active, HIV- women 15-26 yrs in rural South Africa
  - HIV incidence:
    - 3 times higher among girls with a once-off partner
    - 2 times higher among girls with on-going concurrent partner
- Effect over and above adjustments for total number of partners, relationship control, violence and other potentially confounding factors
- Not mediated through partner age

* Shaffer et al, JAIDS, 2010
  Baird et al, Health Econ. 2010 & the Lancet, 2012
Transactional sex & HIV: Conditional Cash Transfer Trial in Zomba, Malawi

Cash transfer scheme to keep girls in school – Zomba, Malawi

$10/month provided to HH of in and out-of-school girls (13-22 yrs)

30% went directly to girls

(Baird et al., 2010 & 2012)

35% reduction school drop-out rate

40% reduction early marriages

76% reduction in HSV-2 risk

30% reduction in teen pregnancies

64% reduction in HIV risk

Results after 18 months among baseline school girls
Evidence of impact: alcohol use

- Alcohol consumption
  - Risk taking personality
    - Drinking venue
    - Partner violence

- Drinking norms
- Alcohol myopia
- Cognitive impairment
- Immune function

- Partner selection
- Sexual frequency
- Partner turnover
- Unprotected sex
- Access to info & services
- Biologic susceptibility

HIV infection

STRIVE
Tackling the structural drivers of HIV
Capturing the multiple benefits of intervening “upstream”

Indicators of Gender Inequality

- Early sexual debut (≤ 16)
- Partner violence
- Lack of secondary education

SRH Indicators
- Teen pregnancy
- High fertility

Maternal & Child Health Indicators
- Unplanned pregnancy
- Home Delivery
- Child diarrhea
- Child fever

HIV

Malawi DHS – Stoekl, H. Thurs. Poster
RESEARCH ON STRUCTURAL CHANGE TO PREVENT HIV

Social forces drive the HIV epidemic and block prevention efforts. STRIVE partners investigate how structural factors create vulnerability and what programmes work to tackle them.

Affiliated projects

Phuza Wize
Phuza Wize (or “consume sensibly”) is a five-year campaign of STRIVE affiliate, Soul City Health and Development Institute, to reduce alcohol use.

Drivers: Alcohol, Gender inequality and violence
Methods: Changing social norms

Resources

What Works to Prevent Partner Violence? An Evidence Overview
Lori Heise reviews the empirical evidence of what works in low- and middle-income countries to prevent violence against women by their partners.
Measuring HIV stigma and discrimination

Authors: Anne L. Stang, Laura Brady and Katherine Fritz from the International Center for Research on Women, Washington, DC

This brief is designed to guide researchers to study HIV stigma, either as the main focus or as an add-on. It outlines the key domains of HIV stigma that need to be measured if we are to understand how stigma works.

**Figure 1. Reducing HIV stigma and discrimination for programme implementation and measurement**

<table>
<thead>
<tr>
<th>Domain</th>
<th>General Population</th>
<th>Healthcare Workers</th>
<th>People Living with HIV/AIDS - Key Populations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived stigma</td>
<td>Are people affected with HIV perceived as less competent, knowledgeable, trustworthy, or higher risk?</td>
<td>Are people perceived as affected with HIV/AIDS perceived as less competent, knowledgeable, trustworthy, or higher risk?</td>
<td>Perceived stigma is not applicable</td>
</tr>
<tr>
<td>Persecution stigma</td>
<td>Have you heard of or heard about someone who was mistreated or stigmatized because of HIV?</td>
<td>Have you heard of or heard about someone who was mistreated or stigmatized because of HIV/AIDS?</td>
<td>Persecution stigma is not applicable</td>
</tr>
<tr>
<td>Fear of discrimination</td>
<td>Do you worry that you would be mistreated or discriminated against because of your HIV status?</td>
<td>Do you worry that you would be mistreated or discriminated against because of your HIV status?</td>
<td>Fear of discrimination is not applicable</td>
</tr>
<tr>
<td>Structural drivers and barriers</td>
<td>Are structural factors increasing or decreasing the risk of HIV?</td>
<td>Are structural factors increasing or decreasing the risk of HIV/AIDS?</td>
<td>Structural drivers and barriers are not applicable</td>
</tr>
<tr>
<td>Attitudinal barriers</td>
<td>Do you agree or disagree with the following statements?</td>
<td>Do you agree or disagree with the following statements?</td>
<td>Attitudinal barriers are not applicable</td>
</tr>
<tr>
<td>Internalized stigma</td>
<td>Are you uncomfortable talking about HIV/AIDS?</td>
<td>Are you uncomfortable talking about HIV/AIDS?</td>
<td>Internalized stigma is not applicable</td>
</tr>
</tbody>
</table>

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*These questions were originally developed by UNAIDS and ICF International (2011).

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Visit us at strive.lshtm.ac.uk

STRIVE TV
STRIVE Digest
STRIVE Learning Labs
Twitter - @hivdrivers

Learning Lab 7. Work on Gender Norms with Adolescents in India, by Nandita Bhatla
The International Center for Research on Women transforms gender norms through a school-based curriculum (GEMS), and trains cricket 11 views

Striveconsortium uploaded