Project Shikamana: Baseline findings from a community empowerment-based combination HIV prevention trial among female sex workers in Iringa, Tanzania

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Background

• Female sex workers (FSW) have 13.5 greater odds of having HIV than women overall
  – Structural factors characterize heightened risk for HIV infection

• Sub-Saharan Africa has the highest regional HIV prevalence (29.3%) among FSW
  – 98,000 FSW die of HIV each year

• Inequitable ART access among FSW
  – 38% of FSW have access to ART & among those 57% suppressed
Background

- Study setting
  - Iringa, Tanzania: 500 km southwest of Dar es Salaam
  - 2nd highest regional HIV prevalence at 9%; 32.9% in FSW
- Formative research
  - Minimal services tailored to the needs and priorities of FSW
  - Stigma, discrimination, violence; desire for financial security
  - Organic mobilization examples: community savings groups

Region is located along the TanZam highway: mobility migration and trade create demand for female sex work
Specific Aims

- **Aim 1** - To establish a preliminary effect size estimate to test the hypotheses that community empowerment-based combination prevention will reduce **HIV incidence** and increase **viral suppression**

- **Aim 2** - To examine how **socio-structural** (stigma, social cohesion) and **behavioral** (condom use, service engagement) factors **mediate** primary study outcomes (HIV incidence and viral suppression)

- **Aim 3** - To assess the **feasibility, acceptability, and safety** of a community empowerment model of combination HIV prevention
Design & Methods

– Community randomized controlled Phase II trial
  • Sample of 496 FSW with 203 HIV+/293 HIV- women, distributed across two matched study communities
  • FSW recruited using time location sampling (venues)

– All participants surveyed at 0 and 12 months, with subsequent HIV testing and viral load assessments
  • Multivariate logistic regression models for primary outcomes, HIV status and viral suppression, at baseline study visit
  • Comprehensive, mixed methods process evaluation
Community empowerment response to HIV:
Community takes collective ownership of programs to address structural constraints
• Associated with 32% reduction in the odds of HIV infection

FSW at the center of the HIV response, creating strategic partnerships to increase access to resources
Intervention Components

Drop-in-center to facilitate community mobilization

Peer service navigation

Send-in-service navigation

Venue based peer education, condoms, HIV testing

Sensitivity training for HIV service providers

SMS reminders for relevant components
Baseline Sample Characteristics

• Mean age is 26.9 years
• Majority are mothers: mean number of 2.0 children
• More than half are married or have a steady partner (56.4%)
• Minority have completed secondary school education (29.2%)
• More than 2/3 use substances (alcohol) during sex work (71.2%)
• Mean number of clients per week: 4.0
• Less than half report using condoms consistently in last month:
  • New clients (40.4%)
  • Regular clients (34.3%)
  • Non-paying steady partners (21.1%)
• Half have ever experienced gender-based violence (50.8%)
• **HIV prevalence: 40.9%**
Among HIV+, 30.5% (62/203) were previously aware of status;

Among those aware 69.4% were on ART (43/62);

For those on ART, 69.8% (30/43) were suppressed (<400 copies/mL).
# Multivariate Model for HIV Status

<table>
<thead>
<tr>
<th>Variables in the model (n=491)</th>
<th>adjOR</th>
<th>95%CI</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community: Mafinga</td>
<td>1.688</td>
<td>1.046, 2.723</td>
<td>0.032</td>
</tr>
<tr>
<td>Age (years)</td>
<td>1.080</td>
<td>1.038, 1.124</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Migration (time in community) &gt; 0.5 years</td>
<td>1.616</td>
<td>1.042, 2.504</td>
<td>0.032</td>
</tr>
<tr>
<td>Married/ Live w sexual/partner/ Past married</td>
<td>1.528</td>
<td>0.992, 2.354</td>
<td>0.054</td>
</tr>
<tr>
<td>Income per sex-work encounter &gt; 15,000 Tsh</td>
<td>0.564</td>
<td>0.332, 0.958</td>
<td>0.034</td>
</tr>
<tr>
<td>Number of clients per week &gt;=4</td>
<td>1.547</td>
<td>0.944, 2.535</td>
<td>0.083</td>
</tr>
<tr>
<td>Use Alcohol/Drugs during sex work</td>
<td>1.620</td>
<td>1.038, 2.527</td>
<td>0.034</td>
</tr>
<tr>
<td>Having tested for STI in last 6 months</td>
<td>0.610</td>
<td>0.422, 0.882</td>
<td>0.009</td>
</tr>
</tbody>
</table>
## Multivariate Model for Viral Suppression

### Variables in the model (n=62)

<table>
<thead>
<tr>
<th>Variables</th>
<th>adjOR</th>
<th>95%CI</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community: Mafinga</td>
<td>4.272</td>
<td>0.992, 18.390</td>
<td>0.051</td>
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<tr>
<td>Age &gt;30 years</td>
<td>7.095</td>
<td>1.401, 35.922</td>
<td>0.018</td>
</tr>
<tr>
<td>Duration of work in venue ≤ 0.5 year</td>
<td>0.209</td>
<td>0.067, 0.649</td>
<td>0.007</td>
</tr>
<tr>
<td>Average # Clients per week ≥ 4</td>
<td>0.097</td>
<td>0.016, 0.581</td>
<td>0.011</td>
</tr>
<tr>
<td>Use Alcohol/Drugs during sex work</td>
<td>0.315</td>
<td>0.093, 1.060</td>
<td>0.062</td>
</tr>
<tr>
<td>Social cohesion score &gt; median</td>
<td>5.326</td>
<td>0.851, 33.352</td>
<td>0.074</td>
</tr>
</tbody>
</table>
Discussion

• Significant burden of HIV in FSW with major gaps in achieving optimal service outcomes along the HIV care continuum

• Need for greater access to HIV testing and linkage services
  – Mobile, venue-based strategy; drop-in-center
  – Sustained approach to peer service navigation

• How to address alcohol use as a barrier to both HIV prevention and treatment outcomes among FSW

• Salience of socio-structural factors shaping HIV outcomes: importance of promoting communication at multiple levels
Future Directions

• Fully and equitably operationalize TasP for FSW
  – Continued engagement and training of government clinical care providers and policy makers regarding needs and rights of FSW

• Community-driven approach to PrEP engagement
  – Develop strategy to integrate PrEP into community-driven platform where PrEP is part of a comprehensive menu of prevention options
Acknowledgments

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