Medicine, Nursing and Health Sciences

**Behavioural interventions improve condom use and HIV testing uptake among female sex workers in China: A systematic review and meta-analysis**

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**Background**

- A meta-analysis showed the risk of HIV among FSW is 50 times higher than that of the general female worldwide⁴
- Chinese FSW
  - Officially illegal in China
  - Low education level & HIV knowledge
- HIV intervention for Chinese FSW
  - Health Education Programs
  - Comprehensive Intervention Programs

**Aim**

- To examine the differences in the effectiveness of these intervention strategies.
  - Types of intervention
    - Health Education Programs
    - Comprehensive Intervention Programs
  - Duration of the intervention strategies
    - ≤ 12 months vs > 12 months
  - Number of follow-up sessions in the intervention
    - One vs more than one follow-ups

**Methods**

- Five databases were used
  - English: PubMed, Embase
  - Chinese: VIP Chinese Journal Database, China National Knowledge Infrastructure (CNKI), Wanfang Data
- Publication from Jan 2000 to Dec 2013
- MeSH and free-text terms: ('human immunodeficiency virus' OR 'HIV' OR 'Acquired immune deficiency syndrome' OR 'AIDS') AND ('prevention' OR 'intervention' OR 'control') AND ('female sex workers' OR 'commercial sex workers' OR 'women who sell sex' OR 'FSW' or 'CSW') AND ('China' OR 'Chinese')

**Outcome measures**

- Changes in condom use
  - In the last sex act, always condom use in the past 1 month
  - Unspecified, regular partners, commercial clients
- HIV testing uptake
  - Any testing within the past 12 months
Results

- 569 records based on keyword searches
- 128 studies were included in the meta-analysis
  - 98 (77%) used comprehensive intervention program
  - 29 (23%) used health education program only
  - 1 used mixed methods
- No RCT

Results

**Results – condom use (past one month)**

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Effect of intervention Odds Ratio (95% CI)</th>
<th>Significance between interventions (p-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Always condom use with any partners</td>
<td>3.1 (2.6-4.7)***</td>
<td>0.015*</td>
</tr>
<tr>
<td>Comprehensive Intervention Program</td>
<td>2.5 (2.0-3.2)***</td>
<td>0.015*</td>
</tr>
<tr>
<td>Health Education Program</td>
<td>2.6 (2.1-3.4)***</td>
<td>0.015*</td>
</tr>
<tr>
<td>Intervention period ≤12 months</td>
<td>3.3 (2.7-4.0)***</td>
<td>0.015*</td>
</tr>
<tr>
<td>Intervention period &gt;12 months</td>
<td>3.3 (2.7-4.0)***</td>
<td>0.015*</td>
</tr>
<tr>
<td>Intervention with 1 follow-up</td>
<td>3.2 (2.5-4.0)***</td>
<td>0.015*</td>
</tr>
<tr>
<td>Intervention with any partners</td>
<td>3.1 (2.6-4.5)***</td>
<td>0.015*</td>
</tr>
</tbody>
</table>

**Results – condom use (last act)**

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Effect of intervention Odds Ratio (95% CI)</th>
<th>Significance between interventions (p-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compendious Intervention Program</td>
<td>3.2 (2.6-4.5)***</td>
<td>0.015*</td>
</tr>
<tr>
<td>Health Education Program</td>
<td>2.6 (2.1-3.4)***</td>
<td>0.015*</td>
</tr>
<tr>
<td>Intervention period ≤12 months</td>
<td>3.3 (2.7-4.0)***</td>
<td>0.015*</td>
</tr>
<tr>
<td>Intervention period &gt;12 months</td>
<td>3.3 (2.7-4.0)***</td>
<td>0.015*</td>
</tr>
<tr>
<td>Intervention with 1 follow-up</td>
<td>3.2 (2.5-4.0)***</td>
<td>0.015*</td>
</tr>
<tr>
<td>Intervention with any partners</td>
<td>3.1 (2.6-4.5)***</td>
<td>0.015*</td>
</tr>
</tbody>
</table>

**Results – HIV testing**

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Effect of intervention Odds Ratio (95% CI)</th>
<th>Significance between interventions (p-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased HIV testing uptake</td>
<td>4.4 (3.8-5.2)***</td>
<td>0.000*</td>
</tr>
<tr>
<td>Comprehensive Intervention Program</td>
<td>8.1 (6.0-10.7)***</td>
<td>0.000*</td>
</tr>
<tr>
<td>Health Education Program</td>
<td>2.7 (2.0-3.6)***</td>
<td>0.000*</td>
</tr>
<tr>
<td>Intervention period ≤12 months</td>
<td>3.6 (2.8-4.3)***</td>
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<td>0.000*</td>
</tr>
</tbody>
</table>

Conclusions

- Summarised 128 behavioural intervention studies.
- Increased condom use is more likely in programs with multiple session interventions.
  - Allow space and time for establishing the necessary trust between FSW and health promotion educators
  - Reinforce messages for safer sex at each follow-up visit
  - Allow more time for the individuals to adopt a new behaviour

Conclusions

- Comprehensive intervention programs are more effective in increasing HIV testing uptakes than health education alone.
  - CIP not only promotes safe sex information, but also links FSW to HIV testing services
  - Regular HIV testing is important
- Intervention with extended duration of implementation (over 12 months) do not further improve condom use and HIV testing uptake.
Implications

- Condom use and HIV testing uptake were improved by the behavioural interventions
- High risk subgroups of FSW remain high priority for intervention
  - Poor working environment
  - Low education level
  - Inconsistent condom use
- Extend to male clients of FSW
- Effectiveness of intervention should focus on the content and delivery through multiple sessions.

Citation


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