Gender-based Violence, HIV Risk, Substance Use, and Mental Health among Female Sex Workers along the Mexico-U.S. Border

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HIV/AIDS and Sex Work in the Mexico-U.S. Border Region
Tijuana and Ciudad Juarez are economically depressed Mexico-U.S. border cities situated along major immigration and drug trafficking routes, making this region a nexus for violence, drug use, sex work, and rising rates of HIV.

High potential for infectious disease transmission across national borders
Sex Work in Mexico

- Sex work is legal within specific areas: Zonas Rojas (red-light zones).
- In Tijuana sex workers can obtain permits from the cities’ Municipal Health Services.
- Ciudad Juarez does not require a permit.
- Attract clients from both U.S. and Mexico.
- Very few (3%) report having pimps.

Photo: Jennifer Syvertsen, 2010
HIV Prevalence

- HIV prevalence among FSWs in Tijuana and Ciudad Juarez is significantly higher than the Mexican national average and has been steadily rising over the last 10 years.

- In 2005 HIV prevalence among FSWs in Tijuana ≈ 6%; FSW-IDU ≈ 14%

- National rate of HIV prevalence = 0.3%
  - (Higher in the border states: 2.5%-4.7%)

Research Studies

1. Mujer Segura
2. Mujer Más Segura
3. Proyecto Parejas
Substance Abuse, Violence, and AIDS/HIV Syndemic Theory

Singer (1996). Free Inq Creat Sociol
Mujer Segura Study

PI: Patterson, TP
(NIMH R01MH65849)

NIMH Diversity Supplement:
Monica Ulibarri
R01MH65849-Supp
Eligibility Criteria

- 18 years old +
- Traded sex for drugs, money or other material goods within the previous 2 months
- Unprotected sex with at least one client in past 2 months
- HIV-negative
- Reside in Tijuana or Ciudad Juarez for at least 6-months
Methods

- Recruited through street outreach, community and municipal health clinics, and referrals from study participants.
- Randomized into Tx or Control
- In person interviews conducted at baseline and 6-months follow-up
- Provided blood draw and cervical swab
- $30 compensation per visit
# Descriptives

Total $N = 924$

(474 Tijuana, 450 Cd. Juarez)

<table>
<thead>
<tr>
<th>Descriptive Measure</th>
<th>Mean ($SD$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Age</td>
<td>33.42 (9.11)</td>
</tr>
<tr>
<td>Mean years of school completed</td>
<td>6.14 (3.15)</td>
</tr>
<tr>
<td>Mean Years in sex work</td>
<td>6.37 (6.81)</td>
</tr>
<tr>
<td>Marital Status</td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>2.5% (23)</td>
</tr>
<tr>
<td>Living with partner</td>
<td>21.5% (199)</td>
</tr>
<tr>
<td>Separated</td>
<td>16.3% (151)</td>
</tr>
<tr>
<td>Divorced</td>
<td>5.6% (52)</td>
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<tr>
<td>Widowed</td>
<td>4.3% (40)</td>
</tr>
<tr>
<td>Single</td>
<td>49.1% (454)</td>
</tr>
<tr>
<td>Mean # of male clients (past 6 months)</td>
<td>336.04 (325.71)</td>
</tr>
<tr>
<td>FSWs who injected drugs (past 30 days)</td>
<td>12% (114)</td>
</tr>
<tr>
<td>HIV-Positive at baseline testing</td>
<td>6.0% (55)</td>
</tr>
</tbody>
</table>
Gender-based Violence among FSWs in Tijuana and Ciudad Juarez
Gender-based Violence and HIV Risk among FSWs

- Globally, history of abuse among FSWs has been well documented and is associated with:
  - Increased drug use
  - Greater HIV vulnerability

- Gaps in literature:
  - Power and control in relationships
  - Perpetrator type
  - Different forms of abuse: emotional, physical, sexual
Prevalence of Abuse among FSWs
(Sample Size = 924)

Types of violence

- Emotional: 30% lifetime, 26% past 6 mo.
- Physical: 18% lifetime, 18% past 6 mo.
- Sexual: 8% lifetime, 10% past 6 mo.

CLIENT PERPETRATED VIOLENCE
(MUJER SEGURA DATA)
Differences in Characteristics of FSWs Who Experienced Recent Client-perpetrated Violence Compared to Those Who Did Not (p ≤ .01)

- Childhood Abuse
- IPV (6 mo.)
- Has clients who use drugs
- Has IDU clients
- FSW injected drugs (1 mo.)
- Used illegal drugs before sex with clients

Additional significant differences: age, # of clients, psychological distress, unprotected sex w/ clients
Factors Independently Associated with Recent Client-perpetrated Violence

<table>
<thead>
<tr>
<th>Factor</th>
<th>Adjusted* Odds Ratio</th>
<th>95% Confidence Interval</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>IPV in past 6 months</td>
<td>2.63</td>
<td>1.50-4.62</td>
<td>&lt;.01</td>
</tr>
<tr>
<td>Psychological Distress</td>
<td>1.54</td>
<td>1.08-2.21</td>
<td>.02</td>
</tr>
<tr>
<td>Had clients who currently use drugs</td>
<td>3.70</td>
<td>1.46-9.34</td>
<td>&lt;.01</td>
</tr>
</tbody>
</table>

Data analysis: 1) non-parametric correlations were conducted among the variables of interest; 2) variables that were significantly correlated with the outcome variable were then included in the logistic regression model. *Variables in the multivariate model are adjusted for all other variables in the model.
Injection drug use as a mediator between client-perpetrated abuse and HIV status among female sex workers in two Mexico-U.S. border cities.

MD Ulibarri, SA Strathdee, EC Ulloa, R Lozada, M Fraga, C Magis-Rodriguez, A De La Torre, H Amaro, P O’Campo, and TL Patterson

*AIDS and Behavior, 15*(1), 179-185, 2011

**Objective:** To test injection drug use as a mediator of the relationship between client-perpetrated abuse and HIV-seropositivity among FSWs.
Summary of Results
(Mediation Model)

Sexual Abuse → Injection Drug Use

Injection Drug Use → HIV

Sexual Abuse → HIV

\[ b = 1.09^{***} \]
\[ b = 0.82^{*} \]
\[ b = 1.25^{***} \]
\[ b = 1.10^{**} \text{ (b decreases with mediator)} \]

\[ z = 2.05, p < .05 \]

(Sobel test)

* \( p < .05 \)
** \( p < .01 \)
*** \( p < .001 \)
Mediation Study Conclusions

- Treating history of abuse and drug use are two ways that we can address HIV risk.

- Using drugs may be a way to cope with the psychological consequences of abuse.
  - (See Ulibarri et al., 2013; Journal of Environmental and Public Health)
Mental Health
History of abuse and psychological distress symptoms among female sex workers in two Mexico-U.S. border cities.


Violence and Victims, 2009

**Objective:** To examine the relationship between history of emotional, physical, and sexual abuse, social support, and symptoms of depression and somatization in a sample of female sex workers (FSWs) in Tijuana and Ciudad (Cd.) Juarez, Mexico.
Why examine Mental Health?

- Research on mental health status may yield a better understanding of complexity of HIV risk factors.
- Higher levels of depression\textsuperscript{1,2,3} and history of sexual abuse\textsuperscript{4,5} have been associated with greater risk of HIV infection among FSWs in Puerto Rico, the U.S., and El Salvador.
Hierarchical Regressions

Depression and Somatization were used as separate criterion variables.

Steps:
1) Demographic variables
2) Social support
3) Abuse items
4) Interactions
Summary of Results

- All forms of abuse predicted higher levels of depressive symptoms
- Physical and sexual abuse predicted higher levels of somatic symptoms
- History of sexual abuse was the strongest predictor of both depressive and somatic symptoms
- FSWs with higher rates of social support reported significantly fewer symptoms of both depression and somatization
- Social support did not emerge as a moderator
Conclusions

- Additional empirically-tested interventions designed to address psychological distress and violence among FSWs
- Additional research to address how these factors may influence:
  - Violence revictimization
  - Drug use
  - HIV risk among FSWs
Behavioral intervention in Tijuana and Ciudad Juarez, Mexico designed to reduce high-risk sexual and injection behaviors.

PI: Strathdee, SA
Co-I: Ulibarri, MD
R01 DA023877
Objective

Utilize mixed methods to:

- examine the prevalence and characteristics of physical and sexual abuse experiences among female sex workers who inject drugs (FSW-IDUs) in Tijuana and Ciudad Juarez
- examine the relationship between history of abuse and current symptoms of depression
- utilize qualitative examples to contextualize the quantitative findings

Methods

- Utilized quantitative data from baseline interviews of 624 FSW-IDUs enrolled in Mujer Mas Segura.

- Qualitative data were obtained from in-depth interviews with a sub-sample (n = 47) of participants residing in Tijuana.

Photo: Alicia Vera, 2010

R01 DA023877 PI: Strathdee; K01 DA025504
Descriptives

- N = 624 (308 Tijuana; 316 Ciudad Juarez)
- Mean age: 33.7 yrs. \( (SD = 8.4) \)
- Highest year of school completed: \( M = 7.1 \) yrs. \( (SD = 3.0) \)
- Average age when first began regularly working as a FSW: \( M = 21.2 \) yrs. \( (SD = 6.8) \)
- Mean depression score: 17.5 \( (SD = 7.0) \), with 86% of the sample scoring above the suggested cut-point (10) for depression.
Prevalence of Abuse

- Experienced forced/coerced sexual abuse: 50%
- Been physically abused: 49%
- Forced sex before age 18: 33%
- Physical abuse before age 18: 24%
- Forced sex before entering sex work: 28%
Quotes: Qualitative Results

- Accounts of abuse may be difficult to hear
- May be triggering
Alma (age 40) [English Translation]

“The man who I thought was my father, was not. When I was 8 he raped me, it was very ugly, that’s why I tell you that I’ve never known true love, I think (crying)... yes, I’ve had partners, but I don’t feel anything sentimentally... I’ve never felt it, with anyone... My stepfather when he penetrated me, when he raped me, after a year he left and didn’t come back... I was the only one who knew why... And then after, telling your mother and having her tell you that it isn’t true, that maybe it isn’t true, maybe I had flirted with him or something, well that’s even worse, because a little girl, how can she flirt with an older man? I was barely an 8 year old girl... Maybe that’s why I started with the drugs- no, no, no, I won’t make excuses, because let me tell you something, the drugs have their own allure, like, I didn’t start using because of the abuse, no, but [the rape] had something to do with it.”
Most common forms of client-perpetrated abuse reported were: rape, having their lives threatened and being robbed.
Sara (age 23)

Question: Is it dangerous to work in this, selling sex here in Tijuana?

“Yes, because there are men that, well, with time you get to know when one is going to try to pull something on you, at first no, but now I can detect if a man is really handsome and has a fancy car and offers me a lot of money, but if I feel that my heart tells me not to go, I don’t go, even if he gives me [a lot], I don’t go, because I know he isn’t good, you understand?... one time, this guy wanted to strangle me, he choked me, we went and I had already gone out with him once before, but he used meth, and all of a sudden he couldn’t get it up, and I don’t know what happened, and he had already paid me $40, which I threw in my bag and I was going to get out because we were driving in his car. Then he grabs me and starts choking me, and when he finished, well, I lost consciousness, when I woke up I was on the sidewalk, he had taken $20 and left me $20, I called my boyfriend and he came and got me. The next day, the bruises were all the way up to my eyes, I couldn’t move my neck.”
Factors Independently Associated with Depression

<table>
<thead>
<tr>
<th></th>
<th>$B$</th>
<th>$SE$</th>
<th>95% Confidence Interval</th>
<th>p-value</th>
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<tbody>
<tr>
<td>Ever raped/forced sex</td>
<td>1.49</td>
<td>.65</td>
<td>0.22,2.76</td>
<td>.02</td>
</tr>
<tr>
<td>Ever raped during sex work</td>
<td>1.76</td>
<td>.79</td>
<td>0.21,3.32</td>
<td>.03</td>
</tr>
</tbody>
</table>
History of abuse is prevalent among FSW-IDU’s in the Mexico-U.S. border region.

Results from the multivariate linear model showed that ever being raped and being raped in the context of sex work were independently associated with depression symptoms.

FSW-IDUs described violence in the context of sex work and histories of childhood abuse, often resulting in drug use as a form of self-medication to forget the trauma.
Conclusions

- Our findings suggest the need for history of abuse screening, re-victimization prevention and supportive counseling services for FSW-IDUs in the Mexico-U.S. border region.
Couples
Epidemiological study of HIV and STIs and associated risk behaviors among FSWs and their non-commercial partners in Tijuana and Ciudad Juarez, Mexico. (214 couples; N = 428 total)

R01 DA027772
P.I.: Steffanie Strathdee, Ph.D.
Co-I: Monica Ulibarri, Ph.D.
## Descriptives

<table>
<thead>
<tr>
<th></th>
<th>Women (n = 214)</th>
<th>Mean (SD)</th>
<th>Men (n = 214)</th>
<th>Mean (SD)</th>
<th>P value</th>
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<tbody>
<tr>
<td>Live in Tijuana (vs. Ciudad Juarez)</td>
<td>104 (49%)</td>
<td></td>
<td>104 (49%)</td>
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<td>ns</td>
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<tr>
<td>Age</td>
<td>33.4 (9.0)</td>
<td></td>
<td>37.3 (9.5)</td>
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<td>.00***</td>
</tr>
<tr>
<td>Years of school completed</td>
<td>6.7 (2.9)</td>
<td></td>
<td>7.4 (2.9)</td>
<td></td>
<td>.01**</td>
</tr>
<tr>
<td>Income</td>
<td>85 (40%)</td>
<td>6.7 (2.9)</td>
<td>118 (55%)</td>
<td>7.4 (2.9)</td>
<td>.00***</td>
</tr>
<tr>
<td>(≤ $2500 pesos/month = $130 US dollars)</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Number of children</td>
<td>3.1 (1.7)</td>
<td></td>
<td>2.7 (1.8)</td>
<td></td>
<td>ns</td>
</tr>
<tr>
<td>Number of financial dependents</td>
<td>1.8 (1.7)</td>
<td></td>
<td>1.6 (1.2)</td>
<td></td>
<td>.00***</td>
</tr>
<tr>
<td>Used drugs in last 6 months</td>
<td>194 (91%)</td>
<td></td>
<td>183 (86%)</td>
<td></td>
<td>.05*</td>
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FSWs’ Relationship Power

FSWs’ IPV Perpetration

FSWs’ IPV Victimization

FSWs’ Depression

Male Partners’ Relationship Power

Male Partners’ IPV Perpetration

Male Partners’ IPV Victimization

Male Partners’ Depression

FSWs’ Unprotected Sex with Partners

Male Partners’ Unprotected Sex with FSWs

β = .158*

β = .380**

β = .30***

β = .296*

β = -.290*

Conclusions

- It is important for future HIV prevention research with couples to address mental health issues such as depression and economic stability.

- Increasing relationship power among FSWs alone is not likely to result in increased condom use with steady partner.
Couples’ views on drug cessation and treatment

Bazzi et al., 2016; Syvertsen et al., 2010
Barriers to treatment

- Financial –
  - prohibitive costs relative to income
  - Child care
- Limited availability
- Limited access
- Quality
- Sex-segregated facilities
- Lack of family or couples-based therapy
  - Not knowing how to be in healthy, sober relationships

- Insufficient medication and social services
- Negative experiences:
  - physical & emotional abuse; sexual harassment
  - Mistrust & cynicism about Tx
- Stigma
  - Lack of aftercare services = relapse
  - Outpatient support groups

Bazzi et al., 2016; Syvertsen et al., 2010
Acknowledgements

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  - Investigators: Steffanie Strathdee, Thomas Patterson, Lawrence Palinkas, Melanie Rusch, Victoria Ojeda, Davey Smith
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- **PROJECT PARTICIPANTS**

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