Psychosexual and social-cognitive correlates of sexual risk behavior among male clients of female sex workers in Tijuana, Mexico

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Male clients of female sex workers (FSWs) may act as a bridge to the general population contributing to the spread of HIV and other sexually transmitted infections (STIs) in the USA and Mexico. This study used cross-sectional data to identify psychosexual and social-cognitive factors associated with sexual risk behavior in a bi-national sample of 300 male clients of FSWs recruited in Tijuana, Mexico from June to October 2008. In a multiple regression analysis, the number of unprotected vaginal sex acts with FSWs was associated with higher sexual compulsivity scores, lower self-efficacy for condom use, greater use of illicit drugs, and more financial need. Behavioral interventions are urgently needed to assist clients of FSWs in reducing high-risk behaviors in an effort to prevent the spread of HIV/STIs in this high-risk population and their sexual partners.

Keywords: male clients; female sex workers; sexual risk behavior; US-Mexico border

Introduction

San Diego, CA and Tijuana, Mexico are adjacent cities on the US-Mexico border. In Tijuana, there are an estimated 5000–9000 female sex workers (FSWs) who provide sexual services to male clients from both countries (Patterson et al., 2006). Sex work is partially regulated in Tijuana, being permitted for women with permits granted by municipal authorities. Rising rates of HIV and sexually transmitted infections (STIs) among FSWs in Tijuana have heightened public health concerns for both Mexico and the USA. Consistent with an emerging epidemic, HIV prevalence among FSWs in Tijuana rose from 0.5% in 1991 to 6% in 2006 (Guerena-Burgueno, Beneson, & Sepulveda-Amor, 1991; Strathdee & Magis-Rodriguez, 2008).

Male clients of FSWs are a possible bridge from high-risk to low-risk populations through unprotected sex with FSWs and other sexual partners (e.g., Alary & Lowndes, 2004). Our bi-national research team recently documented sexual risk behaviors of male clients of FSWs in Tijuana. Goldenberg et al. (2010) reported that 50% of male clients had unprotected sex with FSWs in Tijuana in the past four months. Socio-demographic and social/structural correlates of unprotected sex included being married, being unemployed, using drugs during sex, and visiting the same sex worker. Although that study casts light on the high-risk profiles of male clients of FSWs in Tijuana, the authors did not examine social-cognitive factors and psychosexual characteristics associated with sexual risk behavior in this population.

Early research on male clients of FSWs focused on psychosexual pathology, including deviant personality types, misogyny, traditional attitudes toward male sexuality, and sexually compulsive behavior (Vanwesenbeeck, 2001). In Australia, Xantidis and McCabe (2000) found that male clients who visited brothels had lower social-sexual effectiveness scores compared to male non-clients. O’Connell-Davidson (1998) reported that British clients of FSWs in Thailand associated sexual tourism with affirmation of a sexualized masculine identity. In the Netherlands, unprotected sex among clients was associated with negative attitudes toward condoms and prostitutes; sexual addiction was identified as the primary motive for visiting prostitutes (de Graaf, van Zessen, Vanwesenbeeck, Straver, & Visser, 1997; Vanwesenbeeck, de Graaf, van Zessen, Straver, & Visser, 1993). The role of these understudied and potentially important psychosexual factors in relation...
to sexual risks of male clients in settings with emerging HIV epidemics is largely unknown. Social-cognitive concepts, specifically knowledge and self-efficacy regarding condoms, may also influence sexual risk behavior of male clients. Since HIV knowledge in many Mexican cities is low (Infante et al., 2006; Moyer et al., 2008), assessing clients’ awareness and perceived importance of condom use is a first step.

Substance use is often reported among male clients of FSWs. In two Australian studies, male clients of FSWs were significantly more likely to have ever injected drugs as compared to controls (Coughlan, Mindel, & Estcourt, 2001; Rissel, Richters, Grulich, de Visser, & Smith, 2003). In a London study, 1.9% of male clients reported injection drug use (Day, Ward, & Perrotta, 1993). In mining regions of China, Xu et al. (2008) reported that illegal drug use was an independent risk factor for HIV infection among male clients. Goldenberg et al. (2010) also found an association between unprotected sex and using drugs during sex among male clients of FSWs in Tijuana. Accordingly, this research examined psychosexual and social-cognitive factors in the context of clients’ substance use.

The primary goal of this study was to identify psychosexual and social-cognitive factors associated with the sexual risk behaviors of male clients of FSWs. It was hypothesized that psychosexual and social-cognitive variables would be associated with higher levels of unprotected vaginal and anal sex with FSWs, after adjusting for clients’ background characteristics and substance use. In order to develop effective intervention programs for this population, it is critical to identify factors that, if modified, would have the greatest impact on increasing condom use and reducing HIV/STI incidence among male clients of FSWs in Mexico–US border regions.

**Methods**

**Sample selection**

These analyses used cross-sectional data from a sample of 300 male clients of Tijuana-based FSWs who were recruited between June and October 2008 (Patterson et al., 2009). Eligible participants were male, at least 18 years of age, and had traded money, goods, or drugs for sex with a FSW in Tijuana during the past four months. Clients were approached by outreach workers in the Zona Roja and touts or jaladores were paid $5.00 for each eligible client who enrolled in the study (see Patterson et al., 2009 for details). Clients were paid $30 for a structured, 90-minute computer-assisted personal interview (CAPI), which was conducted in Spanish or English by trained male and female interviewers. Clients also underwent rapid testing for HIV, syphilis, gonorrhea, and Chlamydia with pre- and post-test counseling and point-of-care treatment. The “Determine” rapid HIV antibody test was used (Abbott Pharmaceuticals, Boston, MA, USA); reactive specimens were confirmed using Western blot. Syphilis serology used the rapid plasma reagin (RPR) test (Macro-Vue; Becton Dickenson, Cockeysville, MD, USA). Urine samples were tested for *Chlamydia trachomatis* and *Neisseria gonorrhoeae* using DNA strand displacement amplification (SDA). All confirmatory HIV/STI tests were conducted at the San Diego County Health Department. The research protocol was approved by the Ethics Committee of Tijuana General Hospital and UCSD’s Human Research Protections Program (#071924).

**Measures**

**Background characteristics**

Age, education, and income were treated as continuous; ethnicity, marital status, and living arrangement were coded as categorical. Employment status and place of residence were dichotomous variables. Financial need was assessed using a five-item scale developed by Gelberg, Gallagher, Andersen, and Koegel (1997; α = 0.89).

**Substance use variables**

Frequency of alcohol use was measured by one item from the alcohol use disorders identification test (AUDIT; Fiellin, Reid, & O’Connor, 2000; National Institute on Alcohol Abuse and Alcoholism, 1995; Saunders, Aasland, Babor, de la Fuente, & Grant, 1993). Participants were also presented with a list of 13 drugs and asked how often they had used each drug in the past four months (see Appendix 1). Frequency of use for each item was rated on a seven-point scale and then recoded (1 = yes and 0 = no). A summary variable was created to represent the number of illicit drugs used in the past four months. Injection drug use in the past four months was coded 1 = yes and 0 = no.

**Social-cognitive variables**

The 18-item HIV/AIDS knowledge scale (Carey & Schroder, 2002) was used to assess participants’ awareness of the importance of condom use to HIV prevention (α = 0.70). Attitudes toward condoms were assessed using a seven-item scale with higher scores reflecting more negative attitudes. Our eight-item measure of self-efficacy asks participants the
extent to which they are able to use a condom properly (five items) and negotiate safer sex practices (three items). The attitudes and self-efficacy scales were developed specifically for this research (see Appendix 1).

**Psychosexual factors**
Sexual compulsivity was measured using a 10-item scale developed by Kalichman et al. (1994; α = 0.91). Attitudes toward male sexuality were assessed using 24 items from the Stereotypes about Male Sexuality Scale (SAMSS; Snell, Belk, & Hawkins, 1988; Snell, Hawkins, & Belk, 1990). Scale dimensions used in these analyses were: always ready for sex; sex equals intercourse; spontaneous sex; and males orchestrate sex (α = 0.86). Social-sexual effectiveness was assessed using the 14-item Male Social-Sexual Effectiveness Scale (MSSES) developed by Quackenbush (1989; α = 0.80). The six-item misogyny scale and the nine-item attitudes toward FSWs scale were developed for use in this research. Higher mean scores represent higher levels of misogyny and more negative attitudes toward FSWs (see Appendix 1).

**Sexual risk behaviors**
Sexual risk behavior was defined as unprotected vaginal, anal, or oral sex with FSWs in Tijuana. For each type of sex, male clients were asked two questions: “In the past four months, how many times did you have (vaginal/anal/oral) sex with a female prostitute in Tijuana?” and “How many times did you use a condom for (vaginal/anal/oral) sex with a female prostitute in Tijuana?” Three summary variables were created to represent total number of unprotected vaginal, anal, and oral sex acts with FSWs in Tijuana during the past four months.

**Statistical analysis**
To correct for skewness, log 10 transformations were performed on number of unprotected vaginal sex acts with FSWs in the past four months and number of unprotected anal sex acts with FSWs. Because participants resided in Mexico and the USA, variables of interest were examined according to place of residence. T-tests and contingency table analysis were used to examine group differences in continuous and categorical variables, respectively. A multiple regression analysis was performed to identify variables associated with unprotected vaginal sex with FSWs. Unprotected vaginal sex was considered the primary outcome in these analyses since it was the most common high-risk sexual activity reported by clients. Since we posited that psychosexual and social-cognitive factors would be associated with unprotected vaginal sex with FSWs while controlling for client background characteristics and substance use variables, we conducted a single hierarchical regression. Background characteristics and substance use variables were entered in Steps 1 and 2, respectively, as control variables, followed by social-cognitive variables (Step 3), and psychosexual factors (Step 4). The aforementioned multiple regression analysis was repeated with unprotected anal sex defined as the dependent variable. Oral sex was not examined in these analyses because of the lower HIV/STI risk associated with this activity.

**Results**

**Sample description**
Of 300 men meeting eligibility criteria, most resided in Tijuana (N = 211) or San Diego County (N = 89). Participants were predominately Latino (81.7%), never married (42.7%), living alone or with other adults (70.0%), employed (59.7%), with an average of 10.3 years of education, an income of less than 56,797 pesos per year (US$4500), and an average age of 37.8 years. The average number of FSW partners in the past four months was 7.36 (SD = 11.01). Approximately 50% of the sample reported having unprotected vaginal or anal sex with a Tijuana-based FSW in the past four months. The mean number of unprotected vaginal, anal, and oral sex acts with FSWs during this time frame was 3.92 (SD = 16.45), 0.98 (SD = 5.97), and 5.92 (SD = 19.2), respectively. Clients from San Diego County were significantly more likely than their Tijuana-residing counterparts to be non-Hispanic and have more years of education, and were less likely to have children and live alone (see Table 1).

**What client factors are associated with unprotected vaginal sex with FSWs in Tijuana?**
In Step 1, financial need was the only significant variable. Male clients who had higher scores on financial need had significantly more unprotected vaginal sex with FSWs in the past four months. Age, education, relationship status, and place of residence were not associated with unprotected vaginal sex with FSWs.

In the second step, number of illicit drugs used in the past four months was positively associated with unprotected vaginal sex with FSWs. Frequency of alcohol use and injection drug use in the past four months were not related to unprotected vaginal sex with FSWs.

In the third step, lower scores on self-efficacy for condom use and more negative attitudes toward
condoms were associated with more unprotected vaginal sex with FSWs. HIV/AIDS knowledge and self-efficacy for negotiation were not associated with unprotected sex.

In the fourth step, sexual compulsivity was statistically significant. Male clients who scored higher on a measure of sexual compulsivity had more unprotected vaginal sex with FSWs. Negative attitudes toward FSWs, misogyny, traditional values toward male sexuality, and social-sexual effectiveness were not associated with the outcome. Thus, the final regression model revealed that higher sexual compulsivity scores, lower self-efficacy for condom use, greater use of illicit drugs and client financial need were directly and independently associated with unprotected vaginal sex with FSWs (see Table 2). An identical regression analysis was conducted with total unprotected anal sex as the outcome. Client financial need ($\beta = 0.159$, $p = 0.013$) and lower self-efficacy for condom use ($\beta = -0.149$, $p = 0.027$) were associated with unprotected anal sex with FSWs.

**Discussion**

This study addresses a missing link in HIV/STI prevention by investigating the risk profiles of male clients of FSWs in a bi-national setting. Our findings refute many of the stereotypes of male clients (e.g., that they are socially incompetent) by illustrating that their risk profile is similar to other high-risk groups, such as drug users and gay and bisexual men (Patterson, Semple, Zians, & Strathdee, 2005; Semple, Zians, Grant, & Patterson, 2006; Somlai, Kelly, McAuliffe, Ksobiech, & Hackl, 2003). Specifically, unprotected vaginal sex with FSWs was associated with client financial need, greater use of illicit drugs, lower scores on self-efficacy for condom use, and higher scores on sexual compulsivity. These findings suggest that HIV/STI prevention interventions for male clients of FSWs in Tijuana are urgently needed and will require a multi-dimensional, targeted approach.

Social-cognitive factors, specifically lower self-efficacy for condom use was associated with unprotected vaginal and anal sex with FSWs. Studies of self-efficacy for condom use among Latino men of Mexican origin who have sex with women are few in number. However, several US-based studies of immigrant and migrant Latinos of mostly Mexican origin, including gay, bisexual, and heterosexual men, report an association between low self-efficacy for condom use and sexual risk-taking behavior.
These studies suggest that the relationship between lower self-efficacy for condom use and sexual risk behavior is not unique to male clients of FSWs, and in fact, might be a commonly observed relationship among LatinomenofMexicanorigin, particularly those who have limited social and economic resources. This finding has implications for the development of behavioral interventions for male clients of FSWs in the Northern Mexico border region, where HIV and STIs are on the rise. As evidenced in our previous intervention work, self-efficacy for condom use can be enhanced through skill-building exercises that teach men how to use condoms properly. Also, we found increased self-efficacy for condom use among participants who improved their sexual risk behavior (Mausbach, Semple, Strathdee, Zians, & Patterson, 2007).

Higherscores on a measure of sexual compulsivity were also associated with more unprotected vaginal sex with FSWs. We were unable to find any studies of sexual compulsivity among Latino men in Mexico. However, at least one US-based study has reported a strong relationship between sexual compulsivity and high-risk sex among Latino men who have sex with men (Smolenski, Ross, Risser, & Rosser, 2009). Recent studies in the treatment of sexual compulsivity have focused on early psychological trauma (e.g., sexual abuse), dissociation, attachment trauma (e.g., abandonment), and negative self-concept as underlying factors. Other studies have identified social triggers of sexual compulsivity, including event-centered (e.g., relationship problems) and contextual triggers (e.g., setting, drug use; Parsons, Kelly, Bimbi, Muench, & Morgenstern, 2007). Interventions that acknowledge sources of sexually compulsive behavior and identify social triggers may be effective in reducing HIV/STI risk behaviors among male clients (Gerber, 2008; Parsons et al., 2007).

This study expanded upon our previous findings regarding the association between economic disadvantage, substance use, and unprotected sex with FSWs (Goldenberg et al., in press). The measure of financial need used in the present analyses goes beyond employment status to specify elements of financial need (i.e., lack of shelter, food, etc.). Higher rates of unprotected vaginal and anal sex with FSWs among clients with greater financial need may be an

<table>
<thead>
<tr>
<th>Variable</th>
<th>Step 1</th>
<th>Step 2</th>
<th>Step 3</th>
<th>Step 4</th>
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<td>Age</td>
<td>β</td>
<td>sr²</td>
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<td>0.001</td>
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<td>−0.020</td>
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<td>Number of drugs used in past 4 months</td>
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<td>0.280***</td>
<td>0.049</td>
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<td>Frequency of alcohol use</td>
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<td>0.019</td>
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<td>Injection drug use</td>
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<td>−0.044</td>
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<td>Knowledge</td>
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<tr>
<td>Self-efficacy for condoms</td>
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<td>−0.167**</td>
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<td>Self-efficacy for negotiation</td>
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<td>−0.074</td>
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<td>Negative attitudes toward condoms</td>
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<td>Financial need</td>
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*Note: β, standardized regression coefficient; **p < 0.01; ***p < 0.001 (two-tailed tests).
indicator of the long-term prevalence of unhealthy behaviors among socially and economically disadvantaged males in Mexico (Gutierrez, Bertozzi, Conde-Glez, & Sanchez-Aleman, 2006). Further research is needed to enhance our understanding of the relationship between financial need and sexual risk behaviors among male clients of FSWs so that effective prevention interventions can be developed.

Our research group previously reported an association between being high on drugs during sex with FSWs and unprotected sex (Goldenberg et al., in press). The present analyses demonstrated that another indicator of substance use, specifically polydrug use, is associated with unprotected vaginal sex with FSWs. The relationship between polydrug use and risky sexual practices has been identified in other high-risk populations, including HIV-positive men who have sex with men (Patterson et al., 2005), injection drug users (Baker, Kochan, Dixon, Wodak, & Heather, 1994), and street youth (Howard, 1993). Previous studies have suggested that impulsivity, negative self-perceptions (Patterson et al., 2005), and peer norms regarding the use of drugs and alcohol (Bhattacharya, 2005) may play a key role in understanding the relationship between polydrug use and high-risk sex. Future studies should examine these factors and others as underlying mechanisms that link polydrug use to unprotected sex among male clients of FSWs so that interventions may be developed to modify this risk behavior.

This research makes an important contribution to the HIV/STI prevention literature by focusing on an understudied risk group: male clients of FSWs in the US/Mexico border region. Our findings highlight a need for increased efforts to access this high-risk population, and offer HIV/STI prevention and intervention programs. Despite the value of this research, study limitations warrant discussion. The convenience sample of men who participated in this study should not be considered representative of all male clients of FSWs in Tijuana. Also, these findings should not be generalized to the broader target population of male clients of FSWs. The purchase of sex by male clients may also be associated with self-report biases and inaccurate recall. Lastly, the cross-sectional study design makes it impossible to establish causality between unprotected sex and the significant factors identified. Future research should use prospective data and longitudinal analyses to examine causality in observed relationships.

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References


Appendix 1

Self-efficacy for condom use
(A) I can use a condom properly.
(B) I can use a condom every time I have penetrative sex.
(C) I can use a condom in any situation (e.g., with different partners or in different places).
(D) I can use a condom for penetrative sex while under the influence of drugs or alcohol.
(E) I can delay penetrative sex if a condom is not available. 
Response categories: Strongly Disagree (1), Disagree (2), Agree (3), and Strongly Agree (4).
Cronbach’s alpha = 0.77.

Self-efficacy for negotiation
(A) I can bring up the topic of safer sex with any sexual partner.
(B) I could get my partner(s) to use a condom even if s/he didn’t want to.
(C) I can convince my partner(s) to try different types of condoms.
Response categories: Strongly Disagree (1), Disagree (2), Agree (3), and Strongly Agree (4).
Cronbach’s alpha = 0.75

Negative attitudes toward condoms
(A) Condoms interfere with sexual pleasure.
(B) Condoms make it more difficult for a man to keep an erection.
(C) Condoms make it more difficult for a man to ejaculate.
(D) Condoms feel uncomfortable because they are too tight.
(E) Condoms are useless because they can break and slip off.
(F) Condoms provide good protection from HIV and other STDs. (Reverse Code)
(G) Condoms make sex last longer. (Reverse Code)
Response categories: Strongly Disagree (1), Disagree (2), Agree (3), and Strongly Agree (4).
Cronbach’s alpha = 0.70

Negative attitudes toward female sex workers (FSWs)
(A) A prostitute is like any other woman who is trying to make a living. (Reverse Code)
(B)Prostitutes get what they deserve.
(C) Most prostitutes care about their health. (Reverse Code)
(D) Prostitutes should go to jail if they get caught.
(E)Prostitutes are bad women.
(F)Prostitutes expect to be treated a little rough.
(G)Prostitutes are mostly drug users.
(H)Prostitutes are nice girls who know how to treat a man right. (Reverse Code)
(I) Most prostitutes have good personal hygiene. (Reverse Code)
Response categories: Strongly Disagree (1), Disagree (2), Agree (3), and Strongly Agree (4).
Cronbach’s alpha = 0.65

Misogyny
(A) In my opinion, women are bad news.
(B) Women are only good for one thing, and that is sex.
(C) I avoid women except when it comes to sex.
(D) It wouldn’t bother me to hurt a woman physically.
(E) Women have never treated me very well.
(F) Sex is the only reason why I pursue women.
Response categories: Strongly Disagree (1), Disagree (2), Agree (3), and Strongly Agree (4).
Cronbach’s alpha = 0.75

Drug use scale
During the past four months, how often did you use:
(A) Smoke marijuana or hash?
(B) Heroin by itself?
(C) Methamphetamine by itself?
(D) Ecstasy?
(E) Cocaine by itself?
(F) Heroin and cocaine mixed together (e.g., speedball)?
(G) Heroin and methamphetamine mixed together (e.g., Mexican speedball)?
(G) GHB?
(H) Ketamine?
(I) Inhalants like glue or gasoline?
(J) Tranquilizers, not prescribed (e.g., Diazepam, Valium, Ativan, Restoril, Xanax)?
(K) Barbiturates, not prescribed (e.g., sleeping pills)?
(J) Some other drug by itself?
(K) Some other drug combination?
Response categories: Never (0), ≤1 a month (1), 2–3 days/months (2), Once a week (3), 2–3 days/weeks (4), 4–6 days/weeks (5), and Everyday (6).