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## Correlates of Self-efficacy for Condom Use among Male Clients of Female Sex Workers in Tijuana, Mexico

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### Abstract

Male clients of female sex workers (FSWs) in Tijuana, Mexico engage in high levels of unprotected sex. While behavioral change theories posit that self-efficacy predicts condom use, correlates of self-efficacy for condom use remain largely unstudied. We examined these correlates among male clients of FSWs in Tijuana. Eligible male clients were at least 18 years of age, HIV-negative, lived in Tijuana or San Diego, reported unprotected sex with a Tijuana FSW at least once in the past four months, and agreed to be treated for sexually transmitted infections (STIs). Participants completed an interviewer-administered questionnaire including demographics, substance use, psychosocial and psychosexual characteristics (e.g., outcome expectancies for negotiation of safer sex, social support, and sexual sensation seeking), and sexual behaviors. Participants also underwent HIV/STI testing. A stepwise hierarchical multiple regression analysis identified correlates of self-efficacy for condom use. Of 393 male clients, median age was 37 years. Participants were mostly Spanish-speaking and employed. Factors independently associated with higher self-efficacy for condom use were higher positive outcome expectancies for negotiation of safer sex, lower sexual sensation seeking scores, and higher social support scores. Both psychosocial and psychosexual factors may influence self-efficacy for condom use among male clients of FSWs. These factors represent central constructs in sociocognitive models that explain behavioral change and could be intervention targets for improving self-efficacy for condom use and, ultimately, safer sex behavior.

### Keywords

Condom use; self-efficacy; HIV prevention; sex workers; prostitution

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## INTRODUCTION

In Tijuana, a Mexican city situated on the U.S. border south of San Diego, California, HIV prevalence among male clients of female sex workers (FSWs) is estimated to be 4.1% (Patterson et al., 2009), comparable to that of Tijuana female sex workers (FSWs) (6.0%) (Patterson et al., 2008). Male clients of FSWs may be central in HIV epidemics because of their high levels of sexual risk behaviors and their position as a “bridge” connecting high-risk sexual networks such as FSWs to lower-risk sexual networks, which may include significant others and non-FSW casual partners (Aral, 2000; Lowndes et al., 2002, 2003; Morris, Podhisita, Wawer, & Handcock, 1996; Niccolai, Shcherbakova, Toussova, Kozlov, & Heimer, 2009). Our research group recently found that married male clients from the U.S. and Mexico were more likely to report unprotected sex with FSWs than those who were not married (Goldenberg et al., 2010). Male clients who reported recent unprotected sex with both a FSW and a wife or steady partner were also more likely to report paying more for unprotected sex with FSWs (Patterson et al., 2012). Within the same study, engaging in more unprotected sex was associated with lower self-efficacy for condom use (Semple et al., 2010).

Self-efficacy can be defined as the perception of one’s ability to perform a behavior (Williams, 2010). It is an indispensable component of Bandura’s (1977) Social Cognitive Theory (SCT). One application of this construct, self-efficacy for condom use, is considered important in the application of SCT to HIV prevention (Bandura, 1992; Fisher & Fisher, 2000; Quatrella, 2000; Sheeran, Abraham, & Orbell, 1999), because individuals who are confident in their ability to use condoms are more likely to use them. Self-efficacy for condom use is an important predictor of condom use (Sheeran et al., 1999). Understanding factors associated with self-efficacy for condom use is a prerequisite to increasing condom use (O’Leary et al., 2005; Sheeran et al., 1999).

SCT includes several other constructs that are thought to influence sexual risk behavior. Key among these constructs is the concept of outcome expectancies, which are a person’s assessments that given behaviors will lead to certain results (Bandura, 1977). Other constructs thought to influence behavior indirectly via self-efficacy are knowledge, skills for self-regulation and risk reduction, and social support (Montoya, 1998). It is believed that successful behavioral interventions using SCT must include all the components known to influence self-efficacy, including knowledge and social support (Fisher & Fisher, 2000).

Variables not included in the theoretical constructs of SCT have rarely been examined in SCT-based studies despite evidence that these variables could inform behavioral change theories (Noar, Zimmerman, Palmgreen, Lustria, & Horosewski, 2006; Ogden, 2003). Empirical support exists for examining the association between psychosexual factors and components of SCT, as they could be associated with self-efficacy for condom use. Sexual compulsivity, for example, is defined by a constant and unwanted insistence to attend to sexual urge (Kalichman & Rompa, 1995) and has been associated with self-efficacy for condom use in HIV-positive gay and bisexual men in the United States (O’Leary et al., 2005). Attitudes about condoms were also associated with self-efficacy for condom use in a sample of young adults (Basen-Engquist, 1992). Sexual sensation seeking is a personality

trait characterized by the continued pursuit of novel sexual experiences (Kalichman, Heckman, & Kelly, 1996) and has recently been incorporated into empirical sociocognitive models for use in behavioral interventions (Zimmerman et al., 2007). In these models, sexual sensation seeking has been consistently shown to be directly associated with self-efficacy for condom use (Noar et al., 2006; Zimmerman et al., 2007). While sexual sensation seeking is independently associated with risky sexual behaviors (Kalichman et al., 1994; Kalichman & Rompa, 1995; Mashegoane, Moalusi, Ngoepe, & Peltzer, 2002), evidence is mixed concerning the association between sexual sensation seeking and condom use (Donohew et al., 2000; Noar et al., 2006; Zimmerman et al., 2007).

SCT models posit that psychosocial characteristics, such as HIV knowledge, have an influence on self-efficacy for condom use. HIV knowledge is low in some parts of urban Mexico (Moyer et al., 2008), including among FSWs in the U.S.–Mexico border region (Robertson et al., 2012). SCT further specifies that social support is pivotal in the maintenance of health behavior (Fisher & Fisher, 2000). People may feel more confident about using condoms when they are in a positive social environment in which peers provide cues for acceptable behavior. Social support may also promote an opportunity for learning correct condom use, which could influence one's self-perceived ability to practice safer sex. This suggests that social support could be included in the design of tailored safer-sex interventions. While studies to date have examined the role of social support on self-efficacy for condom use among youth (Meekers & Klein, 2002) and young adults (Basen-Engquist, 1992), this association among high-risk, heterosexual adult males has not yet been established.

Previous investigations have shown that drug use (Day, Ward, & Perrotta, 1993) and alcohol use (de Graaf, Vanwesenbeeck, van Zessen, Straver, & Visser, 1995) are prevalent among male clients of FSWs and may be associated with sexual risk behaviors (Li, Li, & Stanton, 2010; Plant, Plant, Peck, & Setters, 1989; Wee, Barrett, Lian, Jayabaskar, & Chan, 2004). Among male clients of FSWs in Tijuana, studies have shown that methamphetamine use was associated with HIV infection (Patterson et al., 2009): greater use of illicit drugs was associated with more unprotected sex acts (Semple et al., 2010) and using drugs was associated with reporting sex with both a FSW and a steady partner (Patterson et al., 2012). The association between self-efficacy for condom use and substance use among male clients remains unclear.

The goal of the current study was to examine factors associated with self-efficacy for condom use in a sample of 400 male clients of FSWs in Tijuana, Mexico. We hypothesized that sexual sensation seeking, social support, and outcome expectancies for negotiation of safer sex would be independently associated with self-efficacy for condom use after controlling for sociodemographic characteristics and sexual behaviors. Since substance use could confound the association between the psychosocial and psychosexual correlates of self-efficacy, this analysis examined correlates of self-efficacy for condom use while controlling for drug- and alcohol-related variables.

## METHOD

### Participants

Data were drawn from the baseline visit of the *Hombre Seguro* study, an intervention aiming to increase condom use among male clients of FSWs in Tijuana. Between January 2011 and March 2012, 400 male clients of FSWs were recruited in Tijuana. By design, equal numbers of Tijuana-residing and San Diego-residing men were enrolled. In addition to the residence requirement, eligible men were biologically male, aged at least 18 years, reported unprotected vaginal or anal sex with a FSW from Tijuana at least once in the four months prior to enrollment, and agreed to be treated for chlamydia, gonorrhea, and syphilis if they tested positive for any of these infections.

### Procedure

Convenience sampling was used. In central Tijuana, outreach workers and *jaladores* (touts) approached men in the street and referred potential participants to the study's storefront office. These men were compensated \$5 USD to undergo an eligibility screening, which asked whether clients paid for sex and the dates of their most recent sexual acts. To verify that participants were clients of FSWs, men were asked questions relevant to sex work (e.g., the name of a venue where they paid for sex). A total of 786 men were screened for the study, of whom 523 were eligible. Of these men, 73 enrolled in another study and 50 did not participate in a baseline interview. Of the 263 who were excluded, 190 (72%) reported no unprotected sex with a FSW in Tijuana during the previous four months. Men who were interested and eligible were given a card and referred to the study office in central Tijuana. There, eligible men provided written informed consent. Those who were deemed too drunk or high to provide consent were asked to return the next day. As HIV-positive men were ineligible, rapid HIV/STI testing with pre- and post-test counseling was performed upon enrollment. Those who tested positive for chlamydia, gonorrhea, or syphilis were provided free treatment. Those who tested positive for HIV were directed to the Tijuana Health Department.

Participants completed a baseline questionnaire that included demographics, drug- and alcohol-related variables, psychosocial and psychosexual characteristics, and sexual behaviors. Participants also underwent HIV/STI testing. The questionnaire was interviewer-administered in private offices, where men were compensated \$20 USD for participation. Computer-assisted personal interviews (NOVA Software) were conducted by trained personnel in either English or Spanish depending on the participant's preference. UCSD's Human Research Protections Program and Tijuana General Hospital's and Colegio de la Frontera Norte's Ethics Committees approved the study protocol.

### Measures

**Sexual Behaviors**—Participants were asked about the number of STIs since sexual debut, whether they had sex with men in the past four months, and whether they preferred to have sex with men or women. All participants were asked to provide the total number of times they had vaginal and anal sex with FSWs in the past four months and the number of times they used condoms during these acts.

**Sociodemographics**—The sociodemographic characteristics queried were age, citizenship, languages spoken, history (if any) of deportation from the United States, city of residence, education, sexual orientation (i.e., heterosexual or gay/bisexual), employment, and marital status.

**Drug and Alcohol Use**—Participants were asked how frequently they had used heroin, methamphetamine or cocaine in the past four months and whether they had used any of them during sex with a FSW or a male sex worker (MSW). Frequency was measured using a 7-point scale (never to every day). Variables included in the current analysis were heroin, cocaine, and methamphetamine use during the past four months and the use of drugs or alcohol during sex during the past four months.

Due to high reported prevalence of alcohol use among male clients of FSWs (Wee et al., 2004), the Alcohol Use Disorders Test (AUDIT) was used to assess hazardous drinking (Babor, Higgins-Biddle, Saunders, & Monteiro, 2001). AUDIT scores range from 0 to 40. For inclusion in the final regression analysis, we dichotomized this variable at 7 or lower (little to no alcohol problem) versus 8 or higher (medium or high level of alcohol problems and possible or probable alcohol dependence). Provisional analyses using continuous and categorical forms of this variable did not produce any significant change in the outcome of the final analysis; accordingly, we adopted the cut point and dichotomization recommended by the instrument's authors.

**Psychosocial Measures**—HIV knowledge was measured using an 18-item true/false scale developed by Carey and Schroder (2002) (range: 0–100%; Cronbach's  $\alpha = 0.89$  in the current sample), whereby total number of correct responses was divided by total number of questions answered to determine a percentage score. Social support was measured by the 7-item Emotional Support Scale (Pearlin, Mullan, Semple, & Skaff, 1990). The response categories ranged from 1 = strongly disagree to 4 = strongly agree; range for the mean score was 1–4;  $\alpha = 0.89$  for the current sample. Higher mean scores represent a higher level of perceived social support.

**Psychosexual Variables**—A 7-item scale measured condom use attitudes (range for mean score: 1–4;  $\alpha = 0.72$ ), whereby higher mean scores represented more negative attitudes toward condoms (Semple et al., 2010). Outcome expectancies for negotiation of safer sex were measured by three items (e.g., “I believe that my partner(s) will still trust me if I suggest safer sex practices”) using a four-point scale ranging from 1 (strongly disagree) to 4 (strongly agree) (Semple, Patterson, & Grant, 2004). Higher mean scores (range for mean score: 1–4;  $\alpha = 0.76$  for the current sample) represented higher positive outcome expectancies. The 10-item Sexual Compulsivity Scale assessed “insistive, repetitive, intrusive, and unwanted urges to perform sex acts, often in ritualized or routine fashions” (Kalichman & Rompa, 1995) (range for mean score: 1–4;  $\alpha = 0.87$  for the current sample). The Sexual Sensation Seeking Scale is a one-dimensional, 11-item measure developed to capture the constant seeking of unique sexual experiences (Kalichman & Rompa, 1995). The range for mean score was 1–4 and the alpha was 0.76 for the current sample (Kalichman et al., 1994).

**Primary Outcome Variable**—Our dependent variable, self-efficacy for condom use, was measured using a 5-item scale that included the following questions from the EDGE study (Mausbach, Semple, Strathdee, Zians, & Patterson, 2007): “I can use a condom properly”; “I can use a condom every time I have penetrative sex”; “I can use a condom in any situation (e.g., with different partners or in different places)”; “I can use a condom for penetrative sex while under the influence of drugs or alcohol”; and “I can delay penetrative sex if a condom is not available.” The scale has four responses (1 = strongly disagree to 4 = strongly agree), and mean scores were calculated (range: 1–4;  $\alpha = 0.75$  for this study sample).

### Statistical Analysis

For examination of differences in male clients’ characteristics by level of self-efficacy for condom use, self-efficacy was dichotomized at the median score. Sociodemographic characteristics were compared between those with higher self-efficacy and those with lower self-efficacy for condom use using chi-square tests for dichotomous variables and *t*-tests and Wilcoxon rank sum tests for normally and non-normally distributed continuous variables, respectively.

We performed a stepwise hierarchical regression to identify factors associated with self-efficacy for condom use among male clients of FSWs. This analytic strategy permitted us to examine independent associations between our variables of interest (psychosocial and psychosexual variables) and self-efficacy for condom use while controlling for groups of variables that were not included in the theoretical framework (sociodemographic characteristics, drug- and alcohol-related characteristics, and sexual behaviors). We entered blocks of variables into a multivariate model in the following steps: sociodemographic characteristics (Step 1), drug-and alcohol-related variables (Step 2), sexual behaviors (Step 3), and psychosocial and psychosexual characteristics (Step 4). Psychosocial and psychosexual characteristics that achieved and maintained a 5% level of statistical significance were retained in the final model. Multiple *R* (the model correlation coefficient) measured the correlation between the model’s observed and predicted values. *R*-squared (the coefficient of multiple determination) measured the combined percent of the variance in the dependent variable explained by the independent variables. The squared semipartial correlation coefficient ( $sr^2$ ) measured the amount of variance in the dependent variable explained by each particular variable. The increase in *R*-squared was used to evaluate the extent to which the addition of variables from Step 4 explained the increase in variance in the dependent variable. Multicollinearity was assessed by calculating the variance inflation factor (VIF) (Hair, Anderson, Tatham, & Black, 2006).

## RESULTS

### Descriptive Statistics

Of the 400 participants, seven were excluded because data were missing for variables of interest. Of the remaining 393 men, the median age was 37 years and the median number of years of education was nine. Most participants were Spanish-speaking (92.4%) and employed (61.6%). One-third (34.6%) had been deported at least once from the United States. Approximately 12% identified as gay or bisexual and 94.7% preferred sex with a

woman. By design, half (51.1%) of the sample reported living in Tijuana and half (48.9%) in San Diego (Table 1).

The mean score, SD, and range for self-efficacy for condom use were 2.7, 0.42, and 1.4–4, respectively. The distribution for each of the five items from the self-efficacy for condom use scale are shown in Table 2. The median score for self-efficacy was 2.8. Those who scored below the median were classified as having “lower self-efficacy for condom use” and those who scored at or above the median were classified as having “higher self-efficacy or condom use.” Compared to men with lower self-efficacy for condom use, those with higher self-efficacy were significantly more likely to be Mexican citizens ( $p = .04$ ), to have ever been deported from the United States ( $p = .01$ ), to have higher perceived social support ( $p = .02$ ), lower sexual sensation seeking ( $p = .0001$ ), and higher positive outcome expectancies for safer sex negotiation ( $p = .0001$ ) (Table 1).

### **Factors Associated with Higher Self-Efficacy for Condom Use among Male Clients of Female Sex Workers**

Table 3 shows the stepwise hierarchical regression models for the correlates of self-efficacy for condom use among male clients of female sex workers. Among the sociodemographic characteristics considered in Step 1, living in Tijuana was significantly associated with higher self-efficacy for condom use while being a Spanish speaker was associated with lower self-efficacy.

None of the alcohol and drug use variables added in Step 2 were associated with self-efficacy for condom use when controlling for the sociodemographic characteristics. Similarly, none of the sexual behavior variables added in Step 3 were associated with self-efficacy for condom use when controlling for the sociodemographic, drug use, and alcohol use variables.

Of the psychosocial and psychosexual characteristics added in Step 4, higher positive outcome expectancies for negotiation of safer sex, higher social support, and lower sexual sensation seeking were associated with self-efficacy for condom use. The multiple  $R$  for Step 4 was .63, and the increase in  $R$ -squared from Step 3 was .28, which was significant ( $p = .0001$ ). The  $F$ -test  $p$ -value for the entire model was = .0001 (Table 3). A simple regression analysis found an association between self-efficacy for condom use and the reported number of unprotected sex acts with FSWs reported by male clients in the four months prior to the baseline interview date. In a restricted model entering only the statistically significant psychosocial and psychosexual variables from Step 4 (i.e., outcome expectancies, sexual sensation seeking, and social support), the associations of the independent variables and self-efficacy for condom use differed by less than 10% from the associations (9.3%, 8.9%, and 1.0% for outcome expectancies, sexual sensation seeking, and social support, respectively) from the full model. To determine whether the exclusion of clients who preferred sex with men versus women and/or were gay/bisexual changed our results, we ran a restricted model that excluded these subsamples. Our results did not change when this subsample was deleted. Multicollinearity was not problematic, as no VIF value was larger than 5 (Kutner, Nachtsheim, & Neter, 2004). A matrix of the correlations of the final model variables and self-efficacy is shown in Table 4.

## DISCUSSION

In the current study of male clients of FSWs in Tijuana, factors independently associated with higher self-efficacy for condom use included lower sexual sensation seeking scores, higher social support scores, and higher outcome expectancies for negotiation of safer sex. These results highlight important psychosocial and psychosexual factors that may be directly associated with self-efficacy for condom use.

We found that lower sexual sensation seeking scores were independently associated with higher self-efficacy for condom use among male clients. This result was similar to those from a study among young adults in the United States, which found a direct association between sexual sensation seeking and self-efficacy for condom use (Noar et al., 2006). Since both sexual sensation seeking and self-efficacy for condom use may influence condom use, variables for personality and for psychosexual characteristics should be used concurrently to gain a better theoretical understanding of condom use (Noar et al., 2006). However, since previous studies have found limited evidence for a direct association between sexual sensation seeking and condom use (Donohew et al., 2000), the relationships between sexual sensation seeking, self-efficacy for condom use, and sexual behaviors might best be understood through theoretically constructed multivariate models, which have up to this point been underutilized in studies examining these variables and constructs (Noar et al., 2006). Similar to past studies, we found that there was a significant inverse association between self-efficacy for condom use and unprotected sex. However, the direct relationships between the correlates of self-efficacy for condom use (i.e., sexual sensation seeking, social support, and outcome expectancies) were only marginally significantly associated with unprotected sex. More advanced techniques, such as structural equation modeling, may provide further understanding of the potential mediating relationship of self-efficacy for condom use.

As theoretical models such as SCT permit testing multiple direct and indirect relationships, it might be useful to include additional explanatory variables into theoretical frameworks in order to improve their conceptual basis (Ogden, 2003). In addition, understanding the relationships between sexual sensation seeking and other variables within health behavior theoretical models could provide a better understanding to guide the development of successful intervention strategies. Evidence of efficacy in a targeted behavioral intervention including sociocognitive elements has been shown among high sensation seekers (Zimmerman et al., 2007). This suggests that moderation analyses could identify specific groups (e.g., high sensation seekers) that might benefit from interventions. Given that male clients of FSWs may be more likely to seek sexual sensation than non-clients (Xantidis & McCabe, 2000), targeted sociocognitive interventions are recommended that take into account characteristics such as gender and the propensity to seek novel sexual experiences that may influence self-efficacy for condom use (Donohew et al., 2000).

Social support was positively associated with self-efficacy for condom use. To our knowledge, this is a unique finding among male clients of FSWs; however, the association between social support and self-efficacy for condom use has been observed in other populations. A study of youth aged 15–24 in Cameroon found that parental support for



condom use was associated with condom use self-efficacy (Meekers & Klein, 2002). In Bangladesh, more support from peer educators was associated with higher condom use self-efficacy among sex workers (Sarafian, 2012). Self-efficacy for condom use was directly related to social support in a sample of 275 undergraduate students in the United States (Basen-Engquist, 1992). Although the examples mentioned from the supporting literature represent specific kinds of social support rather than general social support, these variables still involve the supporting influence of family members or peers; and this support is associated with self-efficacy for condom use. One possible avenue for creating interventions to increase self-efficacy for condom use is to integrate a social-cognitive approach that includes a positive social environment that provides cues about acceptable behavior. This tactic could be included in an approach that emphasizes observational learning and skill building (Yang, Xia, Li, Latkin, & Celentano, 2010) and it should be incorporated into interventions with other components necessary for self-efficacy building (Fisher & Fisher, 2000).

Outcome expectancies for safer sex negotiation had the strongest association with condom use self-efficacy in our analysis, a result that is postulated by SCT (Bandura, 1977, 1978). This finding was consistent with previous research examining sexual risk among U.S. college students, where 53% of the variance in self-efficacy was explained by outcome expectancies (Wulfert & Wan, 1993). Although we could not determine temporality in this study, SCT posits that self-efficacy causally influences outcome expectancies (Bandura, 1978) and empirical evidence exists for this premise (Dilorio, Dudley, Soet, Watkins, & Maibach, 2000). However, there are also indications that outcome expectancies causally influence self-efficacy (Wulfert & Wan, 1993). This distinction is important, because if outcome expectancies cognitively and causally precede self-efficacy, then interventions attempting to increase self-efficacy could be designed to improve outcome expectancies in order to influence self-efficacy and ultimately, behavior (Williams, 2010). For example, in order to improve self-efficacy, a cognitive intervention could aim to overcome the negative expectancies among sensation-seeking male clients associated with negotiating condom use with partners by practicing condom negotiation dialogues. If, on the contrary, self-efficacy influences outcome expectancies, then traditional SCT safer-sex intervention approaches, such as skill building (Fisher & Fisher, 2000) (e.g., increasing condom using skills), could be utilized.

Given the importance of the placement of these constructs within SCT, longitudinal studies should be conducted to determine the temporality of these relationships. Regardless of temporality, given that many studies have demonstrated a strong association between outcome expectancies and self-efficacy and their subsequent associations with condom use, it is important to take them into account in the development and implementation of safer sex interventions. In fact, it has been suggested that three of the most important factors in condom use behavior are outcome expectancies, self-efficacy, and social support for condom use (Wulfert & Wan, 1995). Successful social cognitive interventions have shown that peer- and motivational-modeling is an effective way to shape outcome expectancies and self-efficacy (Abraham & Sheeran, 1994; Bandura, 1986; Semple et al., 2004; Wulfert & Wan, 1995).

Some limitations should be considered when evaluating the results of the current analysis. Due to errors in participant memory, self-report of sexual risk behavior may be less accurate than other methods. For this reason, participants were asked only about recent sexual behavior (i.e., within the past 4 months). Those who report a low frequency of sexual risk behaviors may over-report them and those who report a high frequency of sexual risk behaviors may under-report them (Schroder, Carey, & Venable, 2003), indicating possible bias in reporting among both groups. Combined, this bias could have influenced the reported association between sexual risk behaviors and self-efficacy for condom use in either direction. Use of cross-sectional data in this study limited our ability to assess causality. The alpha for negative attitudes toward condoms was marginally acceptable ( $\alpha = 0.72$ ), which may have limited our ability to measure constructs properly and could lead to an underestimation of associations. The use of hierarchical regression limited our ability to determine the possible complex relationships among self-efficacy for condom use, its correlates, and sexual risk behavior. Future studies would benefit from modeling these variables using structural equation modeling. Caution should be used generalizing our results to other populations due to the specific characteristics of male clients of Tijuana.

Despite these limitations, we identified three factors that were independently associated with higher self-efficacy for condom use among male clients of female sex workers in Tijuana: higher outcome expectancies for negotiation of safer sex, lower sexual sensation seeking, and higher social support. These factors represent important upstream variables in sociocognitive models and are necessary components for change in self-efficacy for condom use in empirical sociocognitive frameworks. These factors could be used as modifiable components in targeted behavioral interventions designed to improve self-efficacy for condom use and, ultimately, safer sex behavior among individuals at high risk for HIV/STI transmission.

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**Table 1**

Descriptive statistics of participants by self-efficacy score

Characteristic	Lower self-efficacy for condom use (N = 179)	Higher self- efficacy for condom use (N = 214)	p
Median age ( <i>IQR</i> )	37 (29, 44)	38 (30, 46)	ns
Mexican citizenship	133 (74.3%)	166 (77.6%)	.04
Born in Mexico	130 (72.6%)	173 (80.8%)	ns
Live in Tijuana	84 (46.9%)	117 (54.7%)	ns
Spanish speaker	170 (95.0%)	193 (90.2%)	.08
Ever deported from the United States	49 (27.4%)	87 (40.7%)	.01
Median years lived in current city ( <i>IQR</i> )	11 (5, 22)	12.5 (5, 25)	ns
Married/common-law	38 (21.2%)	60 (28.0%)	ns
Median years of education completed ( <i>IQR</i> )	9 (7, 12)	9 (6, 12)	ns
Have children	119 (66.5%)	150 (70.1%)	ns
Employed	117 (65.4%)	125 (58.4%)	ns
Median hours worked per week ( <i>IQR</i> )	35 (0, 40)	24.5 (0, 42)	ns
Median current annual income in thousands of U.S. dollars ( <i>IQR</i> )	7.2 (3.4, 19.2)	5.0 (1.7, 10.0)	ns
Gay or bisexual (versus heterosexual)	25 (14.0%)	23 (10.8%)	ns
Prefer to have sex with women	167 (93.3%)	205 (95.8%)	ns
Wife/steady partner/girlfriend a FSW	20 (11.2%)	24 (11.2%)	ns
Been in jail or a prison <sup>a</sup>	32 (17.9%)	45 (21.0%)	ns
Currently on probation or parole	7 (4.0%)	15 (7.0%)	ns
Median number of STIs since sexual debut ( <i>IQR</i> )	0 (0, 1)	0 (0, 1)	ns
Median social support ( <i>IQR</i> )	3 (2.7, 3.1)	3 (2.9, 3.3)	.02
Median sexual sensation seeking ( <i>IQR</i> )	2.7 (2.5, 2.9)	2.6 (2.4, 2.8)	<.001
Median outcome expectancies for negotiation of safer sex ( <i>IQR</i> )	2.7 (2.3, 2.7)	2.7 (2.7, 3.0)	<.001

<sup>a</sup>Past four monthsNote. *IQR* = Interquartile range

**Table 2**Distribution of items from the Self-Efficacy for Condom Use Scale<sup>a</sup>

Item	M	SD
I can use a condom properly	3.1	0.52
I can use a condom every time I have penetrative sex	2.7	0.62
I can use a condom in any situation (e.g., with different partners or in different places)	2.8	0.60
I can use a condom for penetrative sex while under the influence of drugs or alcohol	2.6	0.61
I can delay penetrative sex if a condom is not available	2.4	0.61

<sup>a</sup> Absolute range, 1–4

Table 3

Self efficacy for condom use regressed on sociodemographic characteristics (Step 1), drug- and alcohol-related variables (Step 2), sexual characteristic variables (Step 3), and psychosocial and psychosexual factors (Step 4) ( $N = 393$ )

Variable	Step 1		Step 2		Step 3		Step 4	
	$\beta$	$sr^2$	$\beta$	$sr^2$	$\beta$	$sr^2$	$\beta$	$sr^2$
Sociodemographic characteristics								
Age	.011	<.001	.004	<.001	.006	<.001	.013	<.001
Mexican citizenship	-.011	<.001	-.006	<.001	-.013	.001	.003	<.001
Spanish speaker	-.178 <sup>c</sup>	.025	-.177 <sup>c</sup>	.024	-.178 <sup>c</sup>	.020	-.149 <sup>c</sup>	.025
Live in Tijuana	.146 <sup>c</sup>	.015	.149 <sup>b</sup>	.015	.156 <sup>b</sup>	.016	.048	.002
Ever deported from the United States	.079	.005	.078	<.001	.072	.004	.079	.007
Married/common-law	.023	.001	.022	<.001	.028	<.001	.064	.005
Years of education completed	.032	.001	.031	.001	.041	.001	.042	.002
Employed	.002	<.001	.007	<.001	.021	<.001	-.002	<.001
Gay or bisexual (versus heterosexual)	-.043	.002	-.038	.001	.044	.001	-.003	<.001
Drug- and alcohol-related variables								
Used heroin <sup>a</sup>	—	—	-.013	<.001	-.013	<.001	.014	<.001
Used methamphetamine <sup>a</sup>	—	—	.059	.002	.062	.002	.061	.003
Used cocaine <sup>a</sup>	—	—	-.077	.005	-.059	.003	-.056	.004
Used drugs during sex <sup>a</sup>	—	—	.017	<.001	-.010	<.001	-.043	.002
Used alcohol during sex <sup>a</sup>	—	—	-.078	.004	-.067	.003	-.059	.004
AUDIT score of 8 versus 7	—	—	.060	.002	.051	.002	.079	.006
Sexual behaviors								
Sex with a male <sup>a</sup>	—	—	—	—	-.008	<.001	.027	.001
Number of vaginal sex acts with FSWs <sup>a</sup>	—	—	—	—	-.064	.003	-.033	.001
Number of anal sex acts with FSW <sup>a</sup>	—	—	—	—	-.064	.002	-.002	<.001
Number of STIs since sexual debut	—	—	—	—	.084	.006	.144	.027
Prefer to have sex with women	—	—	—	—	.125	.009	.063	.004
Psychosocial/psychosexual characteristics								



Variable	Step 1		Step 2		Step 3		Step 4	
	$\beta$	$sr^2$	$\beta$	$sr^2$	$\beta$	$sr^2$	$\beta$	$sr^2$
Negative attitudes toward condoms	—	—	—	—	—	—	.003	<.001
HIV knowledge	—	—	—	—	—	—	-.047	.003
Outcome expectancies for negotiation of safer sex	—	—	—	—	—	—	.408 <sup>d</sup>	.185
Sexual compulsivity	—	—	—	—	—	—	-.083	.006
Sexual sensation seeking	—	—	—	—	—	—	-.146 <sup>b</sup>	.019
Social support	—	—	—	—	—	—	.168 <sup>c</sup>	.039
Multiple R	.243		.266		.321		.637	
R <sup>2</sup>	.059		.071		.103		.386	
Change in R <sup>2</sup> (p-value of change)	—	—	.012 (.533)		.032 (.043)		.283 (<.001)	
F (df)	2.75 (8, 384)		1.95 (14, 378)		1.83 (20, 372)		6.56 (27, 365)	
p-value of model	.006		.021		.007		<.001	

<sup>a</sup> Past four months

<sup>b</sup>  $p < .05$ ;

<sup>c</sup>  $p < .01$ ;

<sup>d</sup>  $p < .001$

**Table 4**

Matrix of correlation coefficients

	Outcome expectancies	Social support	Sexual sensation seeking	Self-efficacy for condom use
Outcome expectancies	1.0			
Social support	.15 <sup>a</sup>	1.0		
Sexual sensation seeking	-.15 <sup>a</sup>	-.09	1.0	
Self-efficacy for condom use	.50 <sup>b</sup>	.25 <sup>b</sup>	-.24 <sup>b</sup>	1.0

<sup>a</sup>  $p < .05$ ;<sup>b</sup>  $p < .001$