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PREVALENCE AND CORRELATES OF CLIENT-PERPETRATED ABUSE AMONG FEMALE SEX WORKERS IN TWO MEXICO-U.S. BORDER CITIES

Monica D. Ulibarri,

Department of Psychiatry, University of California, San Diego

Steffanie A. Strathdee,

Division of Global Public Health, Department of Medicine, University of California, San Diego

Remedios Lozada,

Pro-COMUSIDA, Tijuana, B.C., México

Carlos Magis-Rodriguez,

Centro Nacional para la Prevención y el Control del VIH/SIDA (CENSIDA), National Ministry of Health, Mexico City, México

Hortensia Amaro,

Bouvé College of Health Sciences, Northeastern University

Patricia O'Campo, and

Centre for Research on Inner City Health, University of Toronto, Toronto, Ontario, Canada

Thomas L. Patterson

Department of Psychiatry, University of California, San Diego.

Abstract

History of abuse has been associated with greater HIV risk among women. This study examined client-perpetrated abuse among female sex workers (FSWs) in two Mexico-U.S. border cities where HIV prevalence is rising. Among 924 FSWs, prevalence of client-perpetrated abuse was 31%. In multivariate logistic regression models, intimate partner violence, psychological distress and having drug-using clients were associated with experiencing client-perpetrated abuse. FSWs along the Mexico-U.S. border report frequently experiencing abuse from both clients and intimate partners, which may have serious mental health consequences. Our findings suggest the need for screening and gender-based violence prevention services for Mexican FSWs.

Keywords

Client-perpetrated abuse; Female sex workers; Hispanic women; HIV risk

In many Mexican cities, sex work is quasi-legal, with some cities designating specific sex work areas referred to as *zonas rojas* (red-light districts). The *Zonas Rojas* in Northern Mexican cities that border the U.S. attract large numbers of male clients and “sex tourists” from the United States and abroad as a result of the semi-legal status of sex work, and their location along major drug trafficking and immigration routes (Deren et al., 1997; Strathdee et al., 2008). Like sex workers in other areas of the world (Panchanadeswaran et al., 2008; Shannon et al., 2008; Shannon et al., 2009), FSWs in this region face a multitude of vulnerabilities in the context of their working and private lives including substance abuse, mental health problems, gender-based violence and abuse, legal harassment, social stigmatization, and poverty, which may lead to HIV prevention practices being secondary to their immediate needs for survival (Bucardo, Semple, Fraga-Vallejo, Davila, & Patterson, 2004; Ulibarri et al., 2009; Ulibarri, Strathdee, & Patterson, 2010). FSWs are at heightened risk for HIV and sexually transmitted infections (STIs) not only through their own risk behaviors, but also through the high risk behaviors of their clients such as injection drug use and multiple concurrent sexual partners (Celentano et al., 1993; Day, Ward, & Perrotta, 1993; Patterson et al., 2009). However, there is a paucity of research examining the influence of clients’ behaviors on FSWs’ HIV risk, and there is great need to better understand FSWs’ larger context of risk, which may include social and cultural inequities and gender-based violence.

HIV Prevalence in Tijuana and Ciudad Juarez, Mexico

The city of Tijuana is located just across the U.S.-Mexico border from San Diego, CA in the Mexican state of Baja California. Tijuana has a higher HIV prevalence than the general Mexican population. In 2006, 1 in 116 persons in Tijuana aged 15-49 were estimated to be HIV positive, whereas the HIV prevalence rate among the general Mexican population was 0.3% (CENSIDA, 2006; Iñiguez-Stevens et al., 2009). Ciudad Juarez, a U.S.-Mexico border city located across from El Paso, TX in the Mexican state of Chihuahua, also has HIV rates higher than the Mexican national average. In 2009, Chihuahua ranked 11th out of Mexico's 32 states in terms of cumulative AIDS incidence (CENSIDA, 2009; Ulibarri, Strathdee, & Patterson, 2010). In earlier studies by Patterson and Strathdee et al., HIV prevalence among FSWs in Tijuana and Ciudad Juarez was 6%, and 14% among FSWs who inject drugs (Patterson et al., 2008; Strathdee, Lozada et al., 2008). Recently, HIV prevalence among a sample of U.S. and Mexican clients of FSWs in Tijuana was 4% (Patterson et al., 2009). The potential for cross-border transmission of HIV is a major concern in this border region, which raises public health concerns for both the U.S. and Mexico. Already, HIV surveillance studies suggest the HIV epidemic in Tijuana has transitioned from low-level to concentrated, and may become generalized if current trends remain consistent (Strathdee & Magis-Rodriguez, 2008).

History of Abuse and HIV Risk

Globally, the association between history of gender-based violence and abuse (e.g., childhood abuse, intimate partner violence, and client-perpetrated abuse) and HIV risk among FSWs has been well documented (e.g., Malta et al., 2008; Mayhew et al., 2009; Sarkar et al., 2008; Shannon et al., 2009; Wechsberg, Luseno, & Lam, 2005). However, few

studies have focused on client-perpetrated abuse specifically, and little is known about gender-based violence and abuse against FSWs in the Mexico-U.S. border region. Client-perpetrated abuse includes emotional, physical and sexual abuse such as threats of violence with or without weapons, physical assault, and sexual assault including rape (Cwikel, Ilan, & Chudakov, 2003; Surratt, Kurtz, Weaver, & Inciardi, 2005; Ulibarri et al., 2009). High levels of drug use among clients may potentiate abuse against FSWs. For example, in a study of FSWs in South Africa, 95% of abusive clients were reported to be intoxicated (Wechsberg et al., 2005). Client-perpetrated abuse has been associated with HIV risk behaviors such as unprotected sex, injection drug use, sharing drugs with clients, and HIV-seropositivity among FSWs in India (Panchanadeswaran et al., 2008), Canada (Shannon, Kerr, Bright, Gibson, & Tyndall, 2008), the U.S. Virgin Islands (Surratt, 2007), and New York City (El-Bassel, Witte, Wada, Gilbert, & Wallace, 2001). In addition, research has documented high rates of history of child abuse (e.g., physical and sexual) and intimate partner violence (IPV) among FSWs (Farley, Lynne, & Cotton, 2005; Sanders, 2001; Shannon et al., 2009; Wechsberg et al., 2005).

Studies documenting client-perpetrated abuse among FSWs report levels ranging from about 18% (Shannon et al., 2009) to 75% (Sanders, 2001) depending upon time frame (e.g., past 6 months, past year, lifetime, etc.), and types of abuse under study (e.g., physical assault, rape, harassment, etc.). Client-perpetrated abuse among drug using FSWs is even higher. In an HIV risk-reduction intervention study among drug-using FSWs in Miami, Florida, 23% of the FSWs reported physical victimization and 17% reported sexual victimization in the 90 days prior to baseline interviews (Surratt & Inciardi, 2010). In a study of FSWs in Canada, 25% experienced client-perpetrated abuse in the 6 months prior to the interview, whereas the prevalence of client-perpetrated abuse among FSWs who had shared drugs with clients was 33% (Shannon et al., 2008). In a study of FSWs in the U.S. Virgin Islands, lifetime prevalence of client-perpetrated abuse was 23% for non-drug using FSWs, 38% for FSWs who consumed alcohol only, and 53% among FSWs who used illicit drugs (Surratt, 2007).

Prevalence of client-perpetrated abuse may differ among FSWs at high risk for acquiring HIV. For example, Shannon et al. (2009) found that prevalence of client-perpetrated abuse among FSWs in Canada varied for FSWs who were pressured to have unprotected sex by their clients versus those who were not (28% versus 15%, respectively). Likewise, in a study of FSWs in Eastern India, Nepal, Bhutan, and Bangladesh, FSWs who had experienced abuse in the early phase of their profession were more likely to be HIV positive (20%) than those who had not (8%).

Theoretical Frameworks

Although the causal links between gender-based violence and abuse and HIV risk have not been established, several theories exist. For example, Maman et al. (2000) suggested that women who have been abused may be at increased risk for HIV through forced sex with an HIV-infected partner, fear of violent reactions to requests for safe sexual behavior, and negative patterns of high-risk behaviors established as a result of sexual abuse victimization in childhood and adolescence. Miller (1999) also proposed a theoretical model of the relationship between history of sexual abuse and HIV risk among women incorporating

substance abuse, psychopathology, sexual dissatisfaction and dysfunction, and social network characteristics. Newcomb, Locke, and Goodyear (2003) developed an expanded model of HIV risk based upon Szapocznik and Coatsworth's (1999) ecodevelopmental perspective and Bronfenbrenner's structural ecosystems theory (Bronfenbrenner, 1979). Their perspective takes into consideration multiple levels of social and environmental influence on an individual's behavior (e.g., microsystems, mesosystems, exosystems, etc.) with the addition of aspects of interpersonal and individual factors such as history of abuse, psychological distress, and drug use.

The Current Study

The goal of the present study was to identify potential correlates of client-perpetrated abuse among FSWs in Tijuana and Ciudad Juarez, Mexico based upon the aforementioned theoretical frameworks, and from previous research among FSWs in other countries. These potential correlates included: history of childhood abuse (emotional physical, and sexual); intimate partner violence (emotional, physical and sexual); symptoms of psychological distress; having clients who use drugs; and HIV risk behaviors such as unprotected sex with clients and sharing needles with clients. We hypothesized that among the FSWs client-perpetrated abuse would be associated with: 1) history of childhood abuse and IPV; 2) psychological distress; 3) having clients who use drugs; 4) unprotected sex with clients; and 5) HIV-seropositivity. It is important to identify potential preventable and treatable correlates of HIV risk among FSWs in the Mexico-U.S. border region in order to better inform bi-national public policy regarding HIV/AIDS and future HIV prevention interventions targeting this population. Previous HIV prevention interventions with FSWs have mainly focused on individual-level risk behaviors (e.g., increasing condom use), and have not adequately addressed gender and power inequities that occur within interactions between FSWs' and their clients that may contribute to their overall context of risk. Information from this study will identify potentially important modifiable correlates of HIV risk among FSWs in this region that can be targeted in future HIV prevention interventions through the inclusion of screening and treatment services for history of abuse and resulting psychological distress. In addition, information from this study may elucidate the need to move towards designing HIV prevention interventions that target clients and intimate partners of FSWs as well.

METHODS

Participants

This study utilized data obtained from baseline interviews of 924 participants enrolled in a randomized trial of a safer sex intervention for self-identified FSWs in four Mexico-U.S. border cities (Patterson et al., 2006). Data from two of the four cities (Tijuana and Ciudad Juarez) were available for use in this study. Eligibility criteria for the intervention study were: greater than 18 years old; traded sex for money, drugs, or other material benefits in the previous two months; and had unprotected sex with at least one client during the same time period. FSWs were tested for HIV at baseline and 6-month follow-up interviews as part of the Patterson et al. intervention study. Because one of the outcomes of the intervention was

HIV incidence. FSWs who reported previously testing HIV-positive were excluded from the Patterson et al. study.

Procedures

FSWs were recruited through street outreach, community and municipal health clinics, and referrals from other FSWs participating in the intervention study. The survey was interviewer-administered and lasted approximately 60 minutes. Interviews in Tijuana and Ciudad Juarez were conducted between January 2004 and March 2006. FSWs who completed the interviews received \$30 U.S. dollars for their time. Study protocols were reviewed and approved by institutional review boards in San Diego, Tijuana, and Ciudad Juarez.

Measures

The measures used in this study were developed and piloted by our bi-national (U.S.-Mexico) team of researchers and are described in more detail elsewhere (Patterson et al., 2005); however a brief description of the selection and translation process is provided here. Measures that showed good reliability and validity with other high-risk populations (e.g., injection drug users, FSWs) were selected for use in this study. Measures that were not already available in Spanish were translated into Spanish and backtranslated into English by bilingual and bicultural members of our research team, who also reviewed all items for cultural appropriateness with this population.

Background Characteristics—Participants were asked a series of questions about their background such as age, marital status, years of school completed, length of time working as a FSW, whether or not they have any children, and if so how many. Other questions about background characteristics included whether they had ever experienced emotional, physical, and sexual abuse in childhood, recent intimate partner violence (emotional, physical, and sexual), and current psychological distress symptoms.

Childhood Abuse—The history of childhood abuse variable was constructed using three “yes” or “no” items assessing lifetime emotional, physical, and sexual abuse derived from the family and social relationships section of the fifth edition of the Addiction Severity Index (ASI; McLellan, Kushner, Metzger, & Peters, 1992). Examples included: “In your lifetime, has anyone ever abused you physically?”; “In your lifetime, has anyone ever abused you sexually?” and “In your lifetime, has anyone ever abused you emotionally?” FSWs who responded “yes,” were then asked how old they were when they first experienced that type of abuse. FSWs who first experienced emotional, physical, or sexual abuse before age 18 were classified as experiencing abuse as a child.

Intimate Partner Violence—Emotional, physical, and sexual abuse by a current spouse or steady partner was assessed using three items selected from the family and social relationships section of the fifth edition of the ASI (McLellan et al., 1992). Participants responded either “yes” or “no” to whether they had experienced emotional, physical, and sexual abuse by a spouse or steady partner in the past 6 months. FSWs who reported

experiencing any type of abuse were then combined into one IPV variable (i.e., any IPV in the past 6 months).

Client-Perpetrated Abuse—Client-perpetrated abuse was assessed in a similar way as childhood abuse and IPV using three items from the family and social relationships section of the fifth edition of the ASI, asking whether participants had experienced emotional, physical, and sexual abuse by a client in the past 6 months. Responses were either “yes” or “no.” FSWs who reported experiencing any of these types of abuse were classified into one variable (any client-perpetrated abuse in the past 6 months).

Psychological Distress Symptoms—Current psychological distress symptoms were assessed using 28 items from the somatization, interpersonal sensitivity, depression, anxiety, and hostility subscales of the Brief Symptom Inventory (BSI; Derogatis & Melisaratos, 1983). Participants were asked to rate how bothered they were in the past week by each of the listed symptoms. Responses ranged from “1 = not at all” to “5 = extremely.” Cronbach's alpha for the 28 items of the BSI in this study was .92. A centered mean score for each participant was calculated by subtracting the group mean BSI score from each individual's BSI mean score. The centered mean BSI score was then used in the analyses.

Client Characteristics—FSW-reported client characteristics were assessed using three questions asking FSWs to indicate the number of clients they have who: 1) currently use drugs, 2) have ever injected drugs, and 3) they know have HIV/AIDS. Response choices were “none,” “few,” “some,” “most,” “all,” or “don't know.” The responses for each item were dichotomized into 0 = none and 1 = a few, some, most, or all. Women who answered “don't know” were treated as missing data in the analyses.

Drug Use—Drug use was assessed by asking participants “yes” or “no” response questions about whether they had used a series of drugs (e.g., heroin, methamphetamine, cocaine, etc.) in the past month, and if so, the mode of usage (e.g., injection, smoking, etc.). Participants who had injected any type of drug were combined into one variable labeled “injected drugs in the past month.”

HIV Risk Behaviors—Sexual risk behavior was assessed by the reported number of times participants had unprotected vaginal and anal sex with their clients in the past month. Unprotected oral sex was not included as a high risk behavior in this study because the risk of acquiring HIV from an infected partner through unprotected oral sex is much less than the risk of acquiring HIV from unprotected anal or vaginal sex, and oral sex often occurs in addition to vaginal and anal sex (Centers for Disease Control and Prevention, 2009). FSWs were also asked whether they had shared needles with their clients, and used alcohol or illegal drugs before sex with clients in the past month. Response choices were “yes” or “no.”

HIV Seropositivity—HIV serostatus was determined using the Determine rapid HIV antibody test (Abbott Laboratories; Abbott Park, Illinois, U.S.A). Reactive samples were confirmed by EIA and Western blot. Pre- and post-test counseling was provided; participants with positive test results were referred to municipal health clinics for free medical care as is provided by the Mexican national health system. Confirmatory HIV tests

were conducted at either the San Diego County Health Department (for Tijuana samples) or the El Paso County Health Department (for Ciudad Juarez samples).

Statistical Analyses

First, comparisons between FSWs who reported client-perpetrated abuse in the past 6 months to FSWs who did not were conducted using Wilcoxon rank sum tests for differences in group distributions or Chi square tests for categorical data. Next, univariate logistic regressions were performed for each variable of interest to identify significant correlates of client-perpetrated abuse. Finally, multivariate logistic regressions were performed to identify factors independently associated with client-perpetrated abuse. The final model was developed using a manual procedure where all the variables of interest that attained a significance level $\geq 10\%$ in univariate analyses were considered from most to least significant. The likelihood ratio statistic was used to compare models, retaining variables that were significant at the $\geq 5\%$ level.

RESULTS

Of the 924 FSWs enrolled, 474 (51%) lived in Tijuana and 450 (49%) lived in Ciudad Juarez. The mean age of participants was 33.4 years ($SD = 9.1$), average length of time as a FSW was 5.8 years ($SD = 6.5$), and highest years of school completed was 6.1 years ($SD = 3.2$). As reported previously, 54 (6%) women tested newly HIV-positive (as previously reported in Patterson et al., 2008) at their enrolment visit, and 676 (73%) reported having clients who currently use drugs. The prevalence of all types of client-perpetrated abuse in the past 6 months was 31% ($n = 284$); 237 (26%) FSWs reported experiencing emotional abuse; 163 (18%) reported experiencing physical abuse; and 88 (10%) reported experiencing sexual abuse by clients. The prevalence of IPV in the past 6 months was 105 (11%), and 461 (50%) reported experiencing abuse in childhood.

In terms of background characteristics (Table 1), FSWs who reported experiencing client-perpetrated abuse were significantly more likely to be younger ($M = 32.37$ vs. $M = 33.88$), have more clients in the past 6 months ($M = 405.68$ vs. $M = 303.99$), have experienced abuse in childhood (64% vs. 43%), have experienced IPV in the past 6 months (18% vs. 9%), and have higher levels of psychological distress symptoms as indicated by their BSI mean score ($M = 1.49$ vs. $M = 1.08$) than FSWs who did not report experiencing client-perpetrated abuse.

In regards to FSW-reported client characteristics, FSWs who reported experiencing client-perpetrated abuse were significantly more likely to have clients who currently use drugs and have clients who have ever injected drugs (86% vs. 67%, and 38% vs. 29%, respectively). FSWs who reported experiencing client-perpetrated abuse were also more likely to have injected drugs (17% vs. 10%), had more unprotected vaginal sex acts with their clients ($M = 26.20$ vs. $M = 18.14$), shared needles with their clients (6% vs. 2%), and used illegal drugs before sex with clients (39% vs. 29%) in the past month compared to their FSW counterparts who did not report experiencing client-perpetrated abuse. There was no significant difference between FSWs who reported experiencing client-perpetrated abuse compared to those who did not in regard to HIV seropositivity.

In the final multivariate model (Table 2), three factors were independently associated with client-perpetrated abuse. FSWs who reported experiencing client-perpetrated abuse had more than three-fold increased odds of having clients who currently use drugs (OR = 3.70, 95% CI 1.46-9.34), a more than two-fold greater odds of experiencing IPV (OR = 2.63, 95% CI 1.50-4.62), and had almost two-fold greater odds of having increased levels of psychological distress symptoms (OR = 1.92, 95% CI 1.00-3.67).

DISCUSSION

In this study, nearly one third of FSWs in Tijuana and Ciudad Juarez reported experiencing client-perpetrated abuse in the past 6 months. In addition, having experienced IPV, psychological distress symptoms, and having clients who are drug users were independently associated with increased odds of client-perpetrated abuse. The implications of these findings suggest that it is important to screen for history of client-perpetrated abuse and IPV among this population. In addition, the inclusion of treatment for psychological distress, and trauma related to history of abuse are important factors to consider in future HIV prevention interventions among FSWs along the Mexico-U.S. border.

The prevalence of any of type of client-perpetrated abuse (emotional, physical, or sexual) in our sample was somewhat higher than the prevalence of client-perpetrated violence (harassment, physical, and/or sexual) reported in Shannon et al.'s (2008) study of survival sex workers in Canada (31% versus 25%, respectively). Conversely, the prevalence of physical and sexual client-perpetrated abuse in our study was lower than other studies of drug-using FSWs in Miami, Florida (Surratt & Inciardi, 2010; Surratt et al., 2004). However, it is important to note that prevalence estimates of client-perpetrated abuse among FSWs may vary due to differences in the way abuse is defined and measured, and the designated time frame of the assessment period (e.g. past 6 months versus past 90 days). In addition, drug-using FSWs may be at increased risk for client-perpetrated abuse compared to non-drug using FSWs (Shannon et al., 2008; Surratt, 2007). In general, the prevalence rates of client-perpetrated abuse in this study were within the range of rates reported in other studies of FSWs Shannon et al., 2008; Shannon et al., 2009; Surratt & Inciardi, 2010; Surratt et al., 2004. In terms of prevalence of IPV, there is a paucity of research on IPV among FSWs, but the prevalence of IPV in this sample is comparable to estimates of IPV reported in other Latina samples in the U.S. (Gonzalez-Guarda et al., 2008; see also Ulibarri et al., in press for a more in depth discussion of IPV among this sample of FSWs).

An important finding in this study was that IPV was significantly correlated with client-perpetrated abuse. This suggests that intimate partners may have a significant influence on interactions occurring among FSWs and their clients. Issues such as relationship abuse and violence and HIV risk behaviors in FSWs' intimate relationships may generalize to their interactions with clients or vice versa. Further research examining the influence of intimate partners on FSWs' work relationships and their interactions with clients is needed. For example, a qualitative study of drug-using FSWs and their male partners in Canada found that the partners had significant control over FSWs' drug use as well as client selection, access to condoms with clients, and amount earned per transaction (Shannon et al., 2008). Future HIV risk assessment and intervention feasibility studies with FSWs may want to

consider including their clients and intimate partners, or target them separately. Given the high occurrence of IPV and client-perpetrated abuse against FSWs, the safety of the women must be prioritized, and the potential negative consequences of conducting couples- versus individual-based studies and interventions should be carefully considered. The modality of couples-based interventions might include both members of the dyad simultaneously, each member separately and individually, or a combination of the two. There is a growing consensus that HIV prevention research should focus on couples as a unit of behavioral change (Burton, Darbes, & Operario, 2010; Harman & Amico, 2009), and a growing number of studies have shown that couples-based interventions can be effective in addressing a range of sexual and drug related HIV risk behaviors such as concurrent relationships, sharing needles with outside partners, drug and alcohol abuse, relationship satisfaction, and condom use (El-Bassel et al., 2010; McCrady, Stout, Noel, & Abrams, 1991; Powers, Vedel, & Emmelkamp, 2008). Furthermore, couples-based HIV prevention interventions have the potential to address issues occurring within the relationship that contribute to sexual risk behavior such as gender roles, power imbalances, communication styles, child-bearing intentions, and relationship quality (e.g., commitment, satisfaction, intimacy, etc.) (Burton, Darbes, & Operario, 2010). However, research on couples-based HIV interventions is still sparse, and further investigation is warranted to determine whether successful couples-based interventions seen among some high-risk couples can translate to FSWs and their partners and clients.

The high prevalence of IPV and client-perpetrated abuse in this sample demonstrates the importance of screening for history of abuse among FSWs at high risk for HIV. Although our cross-sectional study precludes us from drawing causal inferences, the results suggest that IPV may be an important contextual factor that could influence FSWs' risk for client-perpetrated abuse and HIV infection. For example, Panchanadeswaran (2008) found that FSWs' experiences of IPV, client-perpetrated abuse and perceived helplessness appeared to prolong their tenure in sex work, and reinforced HIV risks. In a previous report from our team, IPV was significantly associated with lower sexual relationship power (e.g., reduced relationship control and decision-making dominance in relation to their partner) among FSWs in Tijuana and Ciudad Juarez who had spouses or steady partners (Ulibarri et al., in press). Relationship issues in FSWs' primary relationships may generalize to their experiences with clients and could undermine their ability to avoid potentially risky situations in their work environment.

As was hypothesized, greater psychological distress symptoms were associated with client-perpetrated abuse. Our findings among FSWs in Mexico are consistent with other samples of FSWs from various countries documenting the high prevalence of psychological distress and depression among FSWs worldwide (Farley, Baral, Kiremire, & Sezgin, 1998; Farley & Barkan, 1998; Jayasree, 2004). These high prevalence rates prompted Farley et al. to suggest that psychological distress among sex workers be treated as a health crisis as important as the HIV epidemic (Farley & Barkan, 1998; Jayasree, 2004). Some studies of drug users and high risk young adults have linked depression to HIV risk behaviors such as frequency of injection, participation in sex work, and choosing risky sex partners (Latkin & Mandell, 1993; Stiffman, Dore, Earls, & Cunningham, 1992). Psychological distress may be an important factor to consider among FSWs who are at high risk for experiencing client-

perpetrated abuse and trauma, and who may engage in substance use as a form of self-medication. Additional research is needed examining how psychological distress may exacerbate HIV risk behaviors among FSWs. Future HIV prevention interventions among FSWs should consider treatment for psychological distress symptoms. For example, recent research by Amaro et al. (2007) found that including treatment for trauma and mental disorders among women in substance abuse treatment also reduced HIV risk behavior.

Also, as was hypothesized, having clients that FSWs knew were drug users was independently associated with client-perpetrated abuse. This is consistent with other research with FSWs in South Africa in which clients' drug use was associated with increased rates of abuse against FSWs (Wechsberg et al., 2005). Client-perpetrated abuse may have serious mental health and HIV risk consequences. Panchanadeswaran et al. (2008) identified client-perpetrated abuse as a formidable barrier to condom use negotiation among FSWs in India. In addition, clients' drug use may increase violent tendencies, putting FSWs at greater risk for being abused. Fear of retribution for refusing unprotected sex may preclude FSW's attempts to negotiate condom use with their clients, especially those who are under the influence of drugs. As a result, there is a need for more comprehensive HIV prevention interventions that address substance abuse, sexual risk, and history of abuse as interrelated phenomena among FSWs and their clients (Wechsberg et al., 2005). Recently, Surratt and Inciardi (2010) have demonstrated that violence victimization can be reduced along with drug use and sexual risk behaviors in a FSWs-focused HIV risk-reduction intervention in Miami.

Lastly, contrary to our hypotheses, HIV serostatus and sex risk behaviors were not significant correlates of client-perpetrated abuse in this study. The non-significant association between client-perpetrated abuse and HIV sex risk behavior may have been due to a lack of variance in reported unprotected sex acts, which was a consequence of the original study's target sample (high risk FSWs) and eligibility criteria (i.e., at least one unprotected sex act with a client in the previous 2 months). Also, since these data were from an HIV prevention intervention study, women who were knowingly HIV-positive at baseline were excluded, likely underestimating the associations we observed.

Limitations

Several additional limitations must be noted. First, this study was retrospective and relied primarily on self-report data, which can be susceptible to recall bias. However, other studies with high-risk samples such as injection drug users have shown that self-report data can be reliable, and the recall period for participants in this study was relatively short (i.e., past 30 days and past 6 months). Second, the client characteristics were reported by the FSWs, and therefore dependent on their knowledge of their clients' drug use and HIV status. In the interview we did not ask the women how they knew their clients' drug use behavior or HIV status. Instead, we asked them how many of their clients use drugs, have injected drugs, are HIV positive, etc. The response choices were "none," "few," "some," "most," "all" or "don't know." For the analyses, responses for each item were dichotomized into "0 = none," and "1 = a few, some, most, or all." Women who answered "don't know" were not included in the analysis and were treated as missing data. We ran frequencies on the original variables to

see how many women answered “don't know” for each of the items. For the question about number of clients who currently use drugs, 7.7% ($n = 71$) of the FSWs reported “don't know,” and for the item about how many clients have injected drugs, 16% ($n = 149$) FSWs said “don't know.” FSWs are likely to know their clients' current drug use because they witness it in the context of sex work. For the question about how many clients are HIV-positive, 51% ($n = 476$) said “don't know.” This may be why results with this variable were non-significant. In general, we think that the client characteristic information is underestimated rather than overestimated since it is more likely that clients would not disclose this information to FSWs rather than over-report this information to FSWs. In addition, from other work with this same population, we know that many of the FSWs have “regular” clients whom they know well.

Third, there were some limitations to the measures utilized in this study. The “yes or no” abuse items did not allow for the examination of severity or multiple experiences of abuse, therefore limiting the ability to detect more complex and realistic occurrences of abuse and re-victimization and possibly underestimating the prevalence of abuse in our sample. Multilevel behavioral measures of abuse yield more accurate information regarding women's abuse experiences (Roosa, Reyes, Reinholtz, & Angelini, 1998). Also, we were not able to utilize standard clinical cutoff scores for the BSI with this sample. Although the Spanish version of the BSI has been shown to be a reliable and valid measure of psychological distress symptoms for low-income Latina women in the United States (Ruipérez, Ibáñez, Lorente, Moro, & Ortet, 2001), and we have used subscales of the BSI in prior research with FSWs in Mexico (Ulibarri et al., 2009), further research is needed to determine clinical cutoff scores for Spanish-speaking, nonpsychiatric samples. We did not feel it was appropriate to use the same clinical cutoff points established for female, American, psychiatric outpatient samples for our sample; therefore, we utilized a centered mean score for the BSI as suggested by Acosta et al. (1994). Although there were statistically significant differences in BSI mean scores between FSWs who experienced client-perpetrated abuse versus those who did not, we are not able to make any statements about clinically significant differences in their scores. Clinical cutoff scores for this population have not been established and may not represent diagnoses of depression, anxiety, etc., but they may still indicate symptoms of psychological distress that are uncomfortable and reduce quality of life (Derogatis, Fitzpatrick, & Maruish, 2004).

Fourth, this study utilized cross-sectional data negating the ability to make causal inferences about the results. Future studies utilizing longitudinal designs may clarify the observed associations and identify specific predictors of client-perpetrated abuse that can be targeted for subsequent prevention interventions. Lastly, the results of this study may not be generalizable to other ethnic groups of FSWs, nor to other Latina FSWs in Mexico and Latin America. The FSWs in this study were a convenience sample from Tijuana and Ciudad Juarez, which may not be representative of FSWs in other cities or of FSWs as a whole.

Although there may be some cultural consistencies among FSWs globally (e.g., gender-based inequities in society and heterosexual relationships), the overall social, cultural and political environment of the Mexico-U.S. border region is unique, and the manner in which Mexican culture influences clients and FSWs in this region may differ from other areas of

the world. Unfortunately, this study did not include measures of core Mexican cultural values and constructs. More in-depth research is needed to examine exactly how Mexican cultural constructs such as *machismo* and *marianismo* influence gender-role ideology, gender-based violence, relationship power dynamics, and safer-sex decision making among FSWs and their clients along the Mexico-U.S. border. *Machismo* is a traditional gender role orientation that accepts male dominance as a proper form of male conduct, while *marianismo* is a traditional female role orientation that accepts motherly nurturance and the demure and pure identity of a virgin as a proper form of female conduct (Castro & Hernandez, 2004). *Machismo* and *marianismo* may influence high-risk sexual behavior by making it difficult for FSWs to discuss using condoms with their Mexican clients (Rios-Ellis, Kamasaki, & Dwyer, 2006), and in turn, some clients may view requests to use condoms as an affront to their manhood (Deren et al., 1997). On the other hand, *machismo* and *marianismo* may, to some extent, be cultural stereotypes that do not fully apply to FSWs and their clients. Therefore, more qualitative and quantitative research that examines to what extent Mexican cultural constructs such as these influence HIV-risk behavior is needed in this unique geographical region and population.

Conclusions

Overall, the results of this study indicate the importance of addressing partner as well as individual-level factors when assessing history of abuse and HIV risks among FSWs. Co-occurring threats of IPV and client-perpetrated abuse, client drug use, and psychological distress may make it difficult for FSWs to engage in HIV protective behaviors. HIV prevention strategies among FSWs in the Mexico-U.S. border region must address the complexity of risks that FSWs face, and reach out to include their intimate partners and clients. The inclusion of sex workers and clients in the planning of outreach activities of future interventions may yield significant insight into methods for reducing harm.

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Table 1

Characteristics of FSWs in Tijuana and Ciudad Juarez Who Experienced Recent Client-perpetrated Abuse Compared to Those Who Did Not

	Experienced Client-perpetrated Abuse (<i>n</i> = 284)	Did Not Experience Client-Perpetrated Abuse (<i>n</i> = 638)	Total (<i>N</i> = 924)	<i>p</i>
Background Characteristics				
Mean age (SD)	32.4 (8.3)	33.9 (9.4)	33.4 (9.1)	.05
Mean years of school completed (SD)	6.3 (2.9)	6.1 (3.2)	6.1 (3.2)	.16
Mean years as FSW (SD)	5.8 (6.3)	5.8 (6.5)	5.8 (6.5)	.51
Mean number of clients past 6 months (SD)	405.7 (363.5)	304.0 (302.3)	336.0 (325.7)	<.01
Marital status				
Married	6 (2.1%)	17 (2.7%)	23 (2.5%)	.20
Living with partner	63 (22.2%)	136 (21.3%)	199 (21.5%)	
Separated, Divorced, or Widowed	81 (28.5%)	161 (25.2%)	243 (26.2%)	
Single	130 (45.8%)	323 (50.6%)	454 (49.1%)	
Have children	267 (94.0%)	593 (93.1%)	862 (93.3%)	.27
FSW experienced abuse as child ^a	183 (64.4%)	277 (43.4%)	461 (49.9%)	<.01
FSW experienced IPV in past 6 months ^b	50 (17.6%)	55 (8.6%)	105 (11.4%)	<.01
BSI ^c mean score (SD)	1.5 (0.8)	1.1 (0.7)	1.2 (0.8)	<.01
Client Characteristics				
Has clients who currently use drugs	244 (85.9%)	430 (67.4%)	676 (73.2%)	<.01
Has clients who have injected drugs	108 (38.0%)	184 (28.8%)	292 (31.6%)	<.01
Has clients who they know have AIDS	11 (3.9%)	22 (3.4%)	33 (3.6%)	.83
FSWs Drug Use In the Past Month				
Used heroin	52 (20.8%)	78 (12.2%)	130 (14.1%)	.96
Used methamphetamine	61 (21.5%)	136 (21.3%)	197 (21.3%)	.95
Used cocaine	65 (22.9%)	115 (18.0%)	181 (19.6%)	.97
Used alcohol	204 (71.8%)	468 (73.4%)	673 (72.8%)	.62
Injected drugs in the past month	49 (17.3%)	65 (10.2%)	114 (12.3%)	<.01
Risk Behaviors (past month)				
Mean number unprotected vaginal sex acts with clients (SD)	26.20 (37.68)	18.14 (23.89)	20.69 (29.12)	<.01
Mean number unprotected anal sex acts with clients (SD)	5.26 (10.06)	6.14 (13.31)	21.81 (30.77)	.61
Shared needles with clients	17 (6.0%)	11 (1.7%)	28 (3.0%)	.01
Used alcohol before sex with clients	171 (60.2%)	374 (58.6%)	546 (59.1%)	.67
Used illegal drugs before sex with clients	110 (38.7%)	187 (29.3%)	297 (32.1%)	<.01
HIV-seropositivity	18 (6.3%)	36 (5.6%)	54 (5.8%)	.68

Note. Data are no. (%) of women, unless otherwise indicated. Some frequencies do not sum to *n* due to missing values.

^a emotional, physical, or sexual abuse in childhood

^b IPV = emotional, physical, or sexual intimate partner violence by a spouse/steady partner

^c BSI = Brief Symptom Inventory (psychological distress)

Table 2

Factors Associated with Recent Client-perpetrated Abuse among FSWs in Tijuana and Ciudad Juarez

	<i>OR (95% CI)</i>	
	Univariate	Adjusted [†]
Background Characteristics		
Mean age	0.98 (0.97–1.00)	...
Mean years of school completed	1.02 (0.98–1.07)	...
Mean years as FSW	1.00 (0.98–1.02)	...
Mean # of clients past 6 months	1.00 (1.00–1.00)	...
Marital status	0.94 (0.86–1.02)	...
Have children	1.42 (0.76–2.63)	...
FSW experienced abuse as child ^a	2.36 (1.77–3.15)	...
FSW experienced IPV in past 6 months ^b	3.08 (1.85–5.13)	2.63 (1.50–4.62)
BSI ^c mean score	1.96 (1.63–2.35)	1.54 (1.08–2.21)
Client Characteristics		
Has clients who currently use drugs	3.80 (2.39–6.05)	3.70 (1.46–9.34)
Has clients who have injected drugs	1.71 (1.25–2.35)	...
Has clients who they know have AIDS	1.09 (0.51–2.31)	...
FSWs Drug Use In the Past Month		
Used heroin	0.98 (0.50–1.94)	...
Used methamphetamine	0.98 (0.57–1.71)	...
Used cocaine	0.99 (0.66–1.49)	...
Used alcohol	0.92 (0.67–1.27)	...
Injected drugs in the past month	1.84 (1.23–2.74)	...
Risk Behaviors (past month)		
Mean number unprotected vaginal sex acts with clients	1.01 (1.00–1.01)	...
Mean number unprotected anal sex acts with clients	0.99 (0.97–1.02)	...
Shared needles with clients	2.88 (1.25–6.61)	...
Used alcohol before sex with clients	1.06 (0.80–1.42)	...
Used illegal drugs before sex with clients	1.53 (1.14–2.05)	...
HIV-seropositivity	1.13 (0.63–2.03)	...

Note. *OR* = odds ratio; *CI* = confidence interval[†]Variables in the multivariate model are adjusted for all other variables in the model^aemotional, physical, or sexual abuse in childhood^bIPV = emotional, physical, or sexual intimate partner violence by a spouse/steady partner^cBSI = Brief Symptom Inventory (psychological distress)