Published in final edited form as:

AIDS Care. 2015 January ; 27(1): 1–5. doi:10.1080/09540121.2014.946384.

Vulnerabilities faced by the children of sex workers in two Mexico - U.S. border cities: a retrospective study on sexual violence, substance use and HIV risk

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Abstract

Most studies of female sex workers (FSWs) conducted in the Mexico-US border region have focused on individual HIV risk, centered on sexual behaviors and substance abuse patterns. Little attention has been drawn to the reality that sex workers are often parents whose children potentially face vulnerabilities unique to their family situation. The objective of the present study was to identify the vulnerabilities faced by the children of FSWs in two Mexican-U.S. border cities. From 2008-2010, 628 FSW-IDUs underwent interviewer-administered surveys and HIV/STI testing. Approximately 1 in 5 participants (20%) reported having a parent involved in sex work and majority referred it was their mother (88%). Close to one third of participants (31%) reported first injecting drugs <18 years of age and 33% reported they began working regularly as a prostitute <18 years of age. First drinking alcohol <18 years old (AdjOR=1.87, 95%CI: 1.13–3.08), lifetime cocaine use (AOR=1.76, 95%CI: 1.09–2.84), ever being forced or coerced into non-consensual sex as a minor (<18 years of age) (AdjOR =1.54, 95%CI: 1.01-2.35) and injecting drugs with used syringes in the prior month (AOR=1.63, 95%CI:1.07 -2.49) were factors

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associated with having had a parent involved in sex work. These findings begin to lay the groundwork for understanding the potential vulnerabilities faced by the children of sex workers. Understanding these potential needs are necessary for creating relevant, evidence based interventions focused on supporting these women.

Keywords

Female sex workers; Injection drug users; child sexual abuse; children of sex workers; U.S. - Mexico border region

Introduction

Most studies of female sex workers (FSWs) conducted in the Mexico-US border region have focused on individual HIV risk, centered on sexual behaviors and substance abuse patterns (Loza et al., 2010; Strathdee et al., 2009; Ulibarri et al., 2010; Burgos, et al., 2010). To date, little attention has been drawn to the reality that sex workers are often parents whose children potentially face vulnerabilities unique to their family situation. Understanding the vulnerabilities faced by the children of FSWs may be particularly important in Tijuana (Baja California) and Ciudad (Cd.) Juarez (Chihuahua). Two Mexico-US border cities located on a major trafficking route (Bucardo et al., 2005) and where sex work is quasi-legal (Patterson et al, 2006; Sirotin et al, 2010). It is estimated that there are approximately 9000 FSWs in Tijuana and 6000 in Cd. Juarez with more than 90% of FSWs report having children (Morris et al, 2011).

Research is lacking in this region and throughout Latin America examining the vulnerabilities faced by these children, in improving the wellbeing of both parents and children, and reducing the risk of both generations for becoming infected with or transmitting HIV.

The objective of the present study was to identify the vulnerabilities faced by children of FSWs. Data from FSWs who reported having a parent who engaged in sex work were analyzed in order to examine vulnerabilities faced during their childhood.

Methods

Study Population and Data Collection

Data were collected from October 2008 through July 2010, by trained, Spanish-speaking outreach workers who recruited FSWs who were also injection drug users (IDUs) in Tijuana and Cd. Juarez (N=628); details of sampling and recruitment have been published elsewhere (Strathdee et al., 2011; Vera et al., 2012). Eligibility criteria included being at least 18 years old, HIV negative (based on concurrent testing) and in the past month have a) exchanged sex for money, goods or drugs; b) injected drugs; c) had unprotected vaginal or anal sex; and d) shared needles/syringes or other injection paraphernalia. Protocols were approved by the Institutional Review Boards (IRB) at the University of California, San Diego, the General Hospital of Tijuana and the Autonomous University of Cd. Juarez.

Measures

Our dichotomous dependent variable was having had a family member involved in sex work based on the question “*Has anyone in your family ever been a sex worker?*” (Yes vs. no). We also asked who that family member was (i.e., mother, father, sister, etc.) and only included participants who reported a parent involved in sex work (98% of those reporting family in sex work). Independent variables included, demographics, sex work history, substance use history, sexual abuse history, and recent HIV risk behaviors.

Statistical analysis

Univariate and multivariate logistic regression were performed to identify factors associated with having had a parent involved in sex work. Multivariate regression models were developed using a manual procedure maintaining covariates at $p < 0.10$

Results

Of 628 FSW-IDUs, 20% ($n=126$) reported having had a parent involved in sex work; 88% reported that this individual was their mother. All participants reported having had children; 38% reported dependent children <18 years old living with them. One third (33%) reported working regularly as a prostitute before age 18. Having had a parent in sex work did not vary by age, marital status or level of education, but did increase likelihood of drinking alcohol <18 years, cocaine use, being forced or coerced into sex <18 years, and using a used syringe/needle while injecting drugs during the prior month. (Table 1)

In the final multivariate model, having had a parent involved in sex work was associated with drinking alcohol <18 years (AOR=1.87), cocaine use (AOR= 1.76), being forced or coerced into sex <18 years (AOR= 1.54) and using a used syringe/needle while injecting drugs during the prior month (AOR=1.63; (Table 2).

Discussion

This study indicates that in these two Mexican-US border cities, 1 in 5 FSW-IDUs has had a parent involved in sex work. Women who had a parent involved in sex work were more likely to report first drinking alcohol as a minor, using cocaine, being forced or coerced into sex as a minor, and recent IDU-related HIV risk. Implications of these findings are discussed below.

Women who reported having a parent involved in sex work were more likely to report beginning alcohol consumption as minors, reasons for these associations may include individual (e.g., genetic predisposition, conduct disorder), family (e.g., parent-child conflict, child abuse, parental substance use; Teichman & Kefir, 2000), or social risk factors (e.g., substance using peers; Glavak et al., 2003) that may have been present in these women's lives during their childhood or adolescence. They also reported more lifetime cocaine use compared to women who did not report having had a parent involved in sex work. These findings are important to consider, given that a younger age at first substance use has been associated with an increased risk for adult substance abuse and dependence including injection drug use (Hipwell et al., 2012; O'Neil et al., 2012; Whitesell et al., 2012).

Of particular concern is the finding that women with a parent in sex work were over 50% more likely to report being subjected to sexual violence in childhood. Reasons for this may include inadequate access to safe childcare or being abused by parents' partner or clients. Previous studies have found that individuals exposed to child sexual abuse are at higher risk for developing substance abuse problems including drug injection use (Hadland et al., 2012; Langeland & Hartgers, 2004; Fergusson et al., 2008), sexual victimization in adulthood (Messman-Moore & Long, 2003), and engagement in high-risk sexual behaviors and prostitution (Kendler et al., 2000; Lalor & McElvaney, 2010; Parks et al., 2008). Secure childcare options should be made available to reduce these vulnerabilities.

Women who had a parent involved in sex work were also more likely to participate in current major drug use-related HIV risk behaviors such as using used needles or sharing syringes. This could be due to various reasons such as the sexual violence experienced during childhood or adolescence that has been associated with increased risk for substance abuse problems or because female drug users often depend on male partners for drugs and injections, leading them to an elevated risk of equipment sharing practice (UNODC, 2006; Razani et al., 2007). This places women at risk not only for HIV but also for acquiring and transmitting other blood-borne infections such as Hepatitis C, which may play a critical role in bridging HIV infection to the broader population through both drug injection and sexual networks (UNAIDS, 2006; Gu et al., 2008).

Although our findings provide insight into the potential vulnerabilities faced by the children of sex workers, important study limitations merit attention. All of the participants were part of a behavioral intervention; therefore there is the possibility of social desirability. Likewise, retrospective data on childhood experiences that may have occurred up to 20 years ago may be subject to recall bias. Further, the sociocultural context of sex work may have changed since this time, potentially limiting relevance to programming for current children of FSWs. The study also recruited higher risk women (i.e., FSW-IDUs) thus findings cannot be generalized to non-IDU sex workers. However, previous studies conducted in Latin America and North America, including Mexico have documented a considerable overlap between FSW and IDU populations (Sosa-Estani et al., 2003; Bautista et al., 2006; Roy et al., 2011). Specifically, in these two regions, a previous study among FSWs found an estimated 18% reported injection drug use and 60% reported non-injection drug use (Strathdee et al., 2008). However, subsequent studies should include a larger, more representative sample of FSWs.

Conclusions

The current findings lay the groundwork for understanding the potential vulnerabilities that children of sex workers are exposed to, as well as the social and developmental contexts underlying involvement in sex work and drug use. These findings are of concern, given the fact that many women who engage in sex work are mothers and very few research studies have examined these challenges or addressed the needs of this population. Programs designed for sex workers who have child care needs such as teaching parenting skills, providing children with a safe place to stay when their mothers are working, offering drug treatment that is supportive of women with children are needed. Such services will benefit

from ongoing quantitative and qualitative research to better understand the needs of this vulnerable population.

Acknowledgments

The authors gratefully acknowledge the contributions of study participants and staff, including Prevencasa A.C., and Federacion Mexicana de Asociaciones Privadas (FEMAP) and UACJ for assistance with data collection.

Funding: This work was supported by the National Institute on Drug Abuse (NIDA) under grant R01DA023877; the Interdisciplinary Research Training Institute (IRTI) under grant R25DA026401; Fogarty International (FIC) under grant D43TW008633 and the NIDA U.S.-Mexico Drug Abuse Prevention Research Fellowship.

References

- Bautista CT, Sanchez JL, Montano SM, Laguna-Torres A, Suarez L, et al. Seroprevalence of and risk factors for HIV-1 infection among female commercial sex workers in South America. *Sex Transm Infect.* 2006; 82:311–316. [PubMed: 16877581]
- Burgos JL, Gaebler JA, Strathdee SA, Lozada R, Staines H, Patterson TL. Cost-effectiveness of an intervention to reduce HIV/STI incidence and promote condom use among female sex workers in the Mexico-US border region. *Plos One.* 2010; 5(6):e11413. [PubMed: 20617193]
- Bucardo J, Brouwer KC, Magis-Rodríguez C, Ramos R, Fraga M, Perez SG, Patterson TL, Strathdee SA. Review Historical trends in the production and consumption of illicit drugs in Mexico: implications for the prevention of blood borne infections. *Drug Alcohol Depend.* 2005 Sep 1; 79(3): 281–93. [PubMed: 16102372]
- Fergusson DM, Boden JM, Horwood LJ. Exposure to childhood sexual and physical abuse and adjustment in early adulthood. *Child Abuse & Neglect.* 2008; 32(6):607–19. [PubMed: 18565580]
- Glavak R, Kuterovac-Jagodic G, Sakoman S. Perceived parental acceptance-rejection, family-related factors, and socio-economic status of families of adolescent heroin addicts. *Croatia Medical Journal.* 2003; 44(2):199–206.
- Gu J, Chen H, Chen X, Lau JT, Wang R, Liu C, Liu J, Lei Z, Li Z. Severity of drug dependence, economic pressure and HIV-related risk behaviours among non-institutionalized female injecting drug users who are also sex workers in China. *Drug Alcohol Dependence.* 2008; 97(3):257–267. [PubMed: 18482804]
- Hadland SE, Werb D, Kerr T, Fu E, Wang H, Montaner JS, Wood E. Childhood sexual abuse and risk for initiating injection drug use: a prospective cohort study. *Prev Med.* 2012; 55(5):500–4.10.1016/j.ypmed.2012.08.015 [PubMed: 22954518]
- Hipwell A, Stepp S, Chung T, Durand V, Keenan K. Growth in alcohol use as a developmental predictor of adolescent girls' sexual risk-taking. *Prev Sci.* 2012; 13(2):118–28. [PubMed: 22183826]
- Kendler K, Bulik C, Silberg J, Hettema J, Myers J, Prescott CA. Childhood sexual abuse and adult psychiatric and substance use disorders in women: An epidemiological and cotwin control analysis. *Archives of General Psychiatry.* 200; 57(10):953–959. [PubMed: 11015813]
- Lalor K, McElvaney R. Child Sexual Abuse, Links to Later Sexual Exploitation/High-Risk Sexual Behavior, and Prevention/Treatment Programs. *Trauma Violence Abuse.* 2010; 11:159.10.1177/1524838010378299 [PubMed: 20679329]
- Langeland W, Hartgers C. Child Sexual and Physical Abuse and Alcoholism: A Review*. *J Stud Alcohol.* 2004; 65(1):74–83. [PubMed: 15000506]
- Loza O, Patterson T, Rusch M, Martinez G, Lozada R, Staines-Orozco H, Strathdee SA. Drug-Related Behaviors Independently Associated with Syphilis Infection among Female Sex Workers in two Mexico-U.S. Border Cities. *Addiction.* 2010; 105(8):1448–1456. [PubMed: 20456292]
- Messman-Moore TL, Long PJ. The role of childhood sexual abuse sequelae in the sexual revictimization of women: an empirical review and theoretical reformulation. *Clin Psychol Revi.* 2003; 23(4):537–71.

- Morris MD, Case P, Robertson AM, Lozada R, Vera A, Clapp JD, Strathdee SA. Prevalence and correlates of 'agua celeste' use among female sex workers who inject drugs in Ciudad Juarez, Mexico. *Drug Alcohol Depend.* 2011; 117(2-3):219–25. [PubMed: 21441001]
- Parks KA, Hequembourg AL, Dearing RL. Women's social behavior when meeting new men; the influence of alcohol and childhood sexual abuse. *Psychol Women Q.* 2008; 32(2):145–158. [PubMed: 18668186]
- Patterson TL, Semple SJ, Fraga M, Burcardo J, De la Torre A, Salazar J, Strathdee SA. A Sexual Risk Reduction Intervention for Female Sex Workers in Mexico. *Journal of HIV/AIDS & Social Services.* 2006; 5(2):115–137.
- Razani N, Mohraz M, Kheirandish P, Malekinejad M, Malekafzali H, Mokri A, McFarland W, Rutherford G. HIV risk behavior among injection drug users in Tehran, Iran. *Addiction.* 2007; 102(9):1472–1482. 2007. [PubMed: 17645427]
- Roy E, Richer I, Morissette C, Leclerc P, Parent R, et al. Temporal changes in risk factors associated with HIV seroconversion among injection drug users in eastern central Canada. *AIDS.* 2011; 25:1897–1903. [PubMed: 21785319]
- Sirotin N, Strathdee SA, Lozada R, Nguyen L, Gallardo M, Vera A, Patterson TL. A comparison of registered and unregistered female sex workers in Tijuana, Mexico. *Public Health Rep.* 2010; 125(Suppl 4):101–9. [PubMed: 20626197]
- Sosa-Estani S, Rossi D, Weissenbacher M. Epidemiology of human immunodeficiency virus (HIV)/acquired immunodeficiency syndrome in injection drug users in Argentina: high seroprevalence of HIV infection. *Clin Infect Dis.* 2003; 37(Suppl 5):S338–342. [PubMed: 14648443]
- Strathdee SA, Philbin MM, Semple SJ, Pu M, Orozovich P, Martinez G, Lozada R, et al. Correlates of injection drug use among female sex workers in two Mexico-U.S. border cities. *Drug Alcohol Depen.* 2008; (1-3):132–40.
- Strathdee SA, Mausebach B, Lozada R, Staines-Orozco H, Semple SJ, Abramovitz D, Patterson TL. Predictors of sexual risk reduction among Mexican female sex workers enrolled in a behavioral intervention study. *J Acquir Immune Defic Syndr.* 2009; 51(1):S42–6. [PubMed: 19384101]
- Strathdee SA, Lozada R, Martinez G, Vera A, Rusch M. Social and Structural Factors Associated with HIV Infection among Female Sex Workers Who Inject Drugs in the Mexico-US Border Region. *Plos One.* 2011; 6(4):e19048. [PubMed: 21541349]
- Teichman M, Kefir E. The effects of perceived parental behaviors, attitudes, and substance use on adolescent attitudes toward and intent to use psychoactive substances. *J Drug Educ.* 2000; 30:193–204. [PubMed: 10920598]
- Ulibarri MD, Strathdee SA, Patterson TL. Sexual and drug use behaviors associated with HIV and other sexually transmitted infections among female sex workers in the Mexico-US border region. *Curr Opin Psychiatry.* 2010; 23(3):215–20.
- United Nations Programme on HIV/AIDS (UNAIDS). 2006 Report on the Global AIDS Epidemic: A UNAIDS 10th Anniversary Special Edition. Geneva: UNAIDS; 2006.
- United Nations Office on Drugs and Crime (UNODC). HIV/AIDS prevention and care for female injecting drug users. Vienna, Austria: 2006.
- Vera A, Abramovitz D, Lozada R, Martinez G, Rangel MG, Staines H, Strathdee SA. Mujer Mas Segura (Safer Women): a combination prevention intervention to reduce sexual and injection risks among female sex workers who inject drugs. *BMC Public Health.* 2012; 12:653.10.1186/1471-2458-12-653 [PubMed: 22891807]
- Whitesell NR, Kaufman CE, Keane EM, Crow CB, Shangreau C, Mitchell CM. Patterns of Substance Use Initiation among Young Adolescents in a Northern Plains American Indian Tribe. *Am J Drug Alcohol Abuse.* 2012; 38(5):383–8. [PubMed: 22931070]

Table 1

Characteristics of FSW-IDUs who had a parent involved in sex work in Tijuana and Cd. Juarez, Mexico.

	Total FSW-IDU's (N=628)	Parent involved in sex worker (N=126) (20%)	Odds Ratio	95% Confidence Interval
Sociodemographic Characteristics				
Mean age ^a (SD)	33.67 (8)	32.63 (9)	1.30	0.87 – 1.95
Marital status: ^b married/with couple	235 (38%)	44 (35%)	1.18	0.78 – 1.77
Less than High School education	536 (85%)	109 (87%)	1.12	0.63 – 1.98
Average Monthly Income >\$2,500 pesos	433 (67%)	98 (78%)	1.78**	1.12 – 2.84
City: Tijuana ^a	309 (49%)	49 (39%)	1.68**	1.13 – 2.51
Cd. Juarez	319 (51%)	77 (61%)		
Substance Use and Sex Work History				
First drank alcohol (<18 years of age)	429 (68%)	102 (81%)	2.09***	1.25 – 3.46
First injected drugs (<18 years of age)	196 (31%)	44 (35%)	1.46	0.98 – 2.16
Lifetime cocaine use (powder)	406 (65%)	97 (77%)	2.08***	1.32 – 3.28
First traded sex for money, drugs, goods (<18 years of age)	253 (40%)	58 (40%)	1.44	0.97 – 2.13
First began to work regularly as a prostitute (<18 years of age)	208 (33%)	51 (40%)	1.47	0.99 – 2.17
Sexual Violence				
Being forced or coerced to non-consensual sex as a minor (<18 years of age)	190 (30%)	52 (41%)	1.85*	1.23 – 2.77
Current Risk Behaviors				
Always/often used alcohol before-during sex with male client ^d	310 (49%)	71 (57%)	1.44	0.97 – 2.14
Always/often used a needle/syringe that was used before ^d	359 (57%)	82(65%)	1.50*	1.00 – 2.26

* 0.05

** 0.01

*** 0.001

Abbreviations: SD, standard deviation

^a *t* Statistic^b Single/separated vs. married/ with partner^c Yes vs. no^d In the past month

Table 2

Factors independently associated with having had a parent involved in sex work among FSW-IDUs in Tijuana and Cd. Juarez, Mexico.

Characteristic	Adjusted Odds Ratio	95% Confidence Interval
Age first drank alcohol (<18 years of age)	1.87 **	1.11 – 3.08
Lifetime cocaine use (powder) ^a	1.76 *	1.09 – 2.84
Age first time forced, coerced to non – consensual sex (<18 years of age)	1.54 *	1.01 – 2.35
Always/often used a needle/syringe that was used before ^b	1.63 *	1.07 – 2.49

* 0.05

** 0.01

*** 0.001

^a Yes vs. No

^b In the past month