

Childhood Experiences of Sexual Violence, Pregnancy, and Marriage Associated With Child Sex Trafficking Among Female Sex Workers in Two US–Mexico Border Cities

Sabrina C. Boyce, MPH, Kimberly C. Brouwer, PhD, Daniel Triplett, MPH, Argentina E. Servin, MD, Carlos Magis-Rodriguez, MD, and Jay G. Silverman, PhD

Objectives. To quantitatively assess the relationships of childhood experiences of marriage, pregnancy, and sexual violence with underage sex trafficking.

Methods. Cross-sectional survey data from a population-based sample of 603 female sex workers from Tijuana and Ciudad Juárez, Mexico, were collected in 2013 and 2014, and we analyzed the data to evaluate relationships between pregnancy, marriage, and sexual violence when younger than 16 years, and child sex trafficking.

Results. Adjusted odds of child sex trafficking among those who experienced pregnancy, marriage, and childhood sexual violence when younger than 16 years in combined models were 2.8 (95% confidence interval [CI]= 1.8, 4.3), 1.7 (95% CI= 0.99, 2.8), and 1.7 (95% CI= 1.01, 3.0), respectively, relative to others (n= 603). For 89.8%, 78.0%, and 97.0% of those who had an experience of pregnancy (n= 69), marriage (n= 50), or sexual violence (n= 33) when younger than 16 years, respectively, the experience occurred before or the same year as sex trafficking.

Conclusions. These results provide empirical evidence of modifiable risk factors for child sex trafficking that could be integrated into the prevention efforts and protocols of health clinics and governmental agencies in Mexico currently working to reduce underage pregnancy, marriage, and sexual violence. (*Am J Public Health.* 2018;108:1049–1054. doi:10.2105/AJPH.2018.304455)

The UN *Convention on the Rights of the Child* declares that children (i.e., those aged < 18 years) have the right to protection from all forms of sexual exploitation and trafficking and that member nations should take all appropriate national, bilateral, and multilateral prevention measures. Child sex trafficking was internationally defined for the first time in 2000 by the UN Palermo Protocol as the

... recruitment, transportation, transfer, harboring or receipt of a child for the purpose of exploitation . . . [which] include[s], at a minimum, the exploitation of the prostitution of others or other forms of sexual exploitation.¹

It is estimated that, globally, 1 in 3 sex trafficking victims is a child, with the large majority being female.²

Although international attention to this topic has greatly increased over the past decade, resulting in myriad criminal justice responses, this attention has resulted in few evidence-based strategies that effectively prevent sex trafficking.² Mexico, because of its geographical location, in particular, is a major source, transit, and destination country for sexually exploited minors.³

A recent study among female sex workers (FSWs) in northern Mexico found that 1 in 4 were sex trafficked when younger than 18 years and that those who were sex trafficked as minors were 3 times more likely to acquire HIV, a finding that reinforces HIV risk among sex-trafficked FSWs found in other global settings.^{4–11} Moreover, those who were sex trafficked underage were significantly more likely to have experienced violence to force involvement in commercial sex, high client volume, and no use of condoms with clients during their first 30 days in the sex trade.⁷ As a response to this human rights violation and public health concern, in 2012, the Mexican government developed an antitrafficking law and a federal interagency commission.¹² This law has led mostly to increased training for officials and public awareness campaigns. To date, there is no known evidence of prevention efforts that effectively reduce the risk of child sexual exploitation in Mexico, or any other nation globally.^{3,13}

A major barrier to development of effective prevention strategies by national and multilateral agencies is the lack of data identifying modifiable risk factors that increase children's vulnerability for child sex trafficking, attributable in large part to the hidden nature of the population. The UN Office on Drugs and Crime in Mexico reports

ABOUT THE AUTHORS

At the time of the study, Sabrina C. Boyce, Daniel Triplett, Argentina E. Servin, and Jay G. Silverman were affiliated with the Center on Gender Equity and Health, School of Medicine, University of California, San Diego, La Jolla. Kimberly C. Brouwer was with the School of Medicine, University of California, San Diego. Carlos Magis-Rodriguez was with the National Center for the Prevention and Control of HIV/AIDS, Ministry of Health, Mexico City, Mexico.

Correspondence should be sent to Sabrina C. Boyce, MPH, Department of Medicine, University of California San Diego, Central Research Services Facility, 9500 Gilman Dr, La Jolla, CA 92093-0507 (e-mail: sboyce@ucsd.edu). Reprints can be ordered at <http://www.ajph.org> by clicking the "Reprints" link.

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that women, especially girls and adolescents, who are illiterate, from areas of high poverty and unemployment levels, indigenous, and migrating while unaccompanied, are especially vulnerable to exploitation.^{3,13} Previous research conducted in other regions indicates that childhood experiences of physical or sexual violence are common among survivors of child sex trafficking.^{14–16}

Adolescent pregnancy, an experience associated with child marriage and forced or coerced sex, often leads to a sequelae of social, economic, and health vulnerability, including residential instability, school dropout, weaker social networks, and violence, vulnerabilities that may facilitate child sex trafficking.^{17–20} Marrying when younger than 18 years (i.e., child marriage), including when such a marriage is forced or involves kidnapping, also places girls at heightened risk for forced or coerced sex and limited sexual negotiation power with their husbands compared with those who marry later.^{21–23} Taken together, there may be a convergence of vulnerability around child marriage, pregnancy, violence, and sex trafficking of minors. No research in Mexico or elsewhere, to date, has been designed to assess whether these early life experiences increase vulnerability for underage sex trafficking and, thus, provide clear evidence as to which modifiable factors during childhood represent targets for prevention efforts.

We aimed to address this gap in the literature by quantitatively assessing the relationships of marriage, pregnancy, and sexual violence when younger than 16 years with child sex trafficking among a population-based sample of women currently engaged in the sex industry in 2 major US–Mexico border cities. We also assessed the temporality of observed associations among these experiences to clarify whether they occurred before child sex trafficking. By doing so, we sought to understand whether child pregnancy, marriage, and sexual violence are modifiable risks that represent targets for prevention efforts and could help identify and assist those most vulnerable to sex trafficking for prevention.

METHODS

The US–Mexico border is one of the most transited international borders and crosses

through 2 of the largest binational conurbations: San Diego, California–Tijuana, Baja California, Mexico, and El Paso, Texas–Ciudad Juárez, Chihuahua, Mexico, sections of the border through which constant human mobility, international legal commerce, and social and cultural exchange is strongly established. These highly transited sections of the border also provide a setting for other activities, such as drug trafficking, money laundering, sex trafficking, and sex tourism. There are an estimated 9000 FSWs in Tijuana and 6000 in Ciudad Juárez meeting the demands of male clients of the sex trade. These FSWs operate out of diverse venues such as cantinas, bars, nightclubs, and street corners.^{24–26} In both cities, although presence of minors in the sex trade is illegal, adolescent involvement in the sex trade in this border region is common.⁷ Trafficking of children for exploitation in the border region sometimes involves internal transport of victims; the South and Southeastern regions of Mexico are considered high-risk zones for trafficking to the US–Mexico border.¹³

Data Collection

Data included in the current analysis were collected as part of the baseline survey of 603 FSWs enrolled in a longitudinal study examining social, spatial, and built environmental influences on HIV risk and sex trafficking experiences among FSWs in Tijuana and Ciudad Juárez (R01DA028692, PI: K. C. B.; R01DA033194, PI: J. G. S.). As published elsewhere, data were collected from August 2013 to October 2014.^{7,27} A representative sample of FSWs in these 2 cities were selected through modified time–location sampling within both indoor and street venues throughout both cities. Of 200 venues identified, 25 did not permit recruitment, though venue type did not differ by willingness to participate. No more than 15 women were recruited from any particular venue. In both cities, field and data collection staff were residents of these cities with previous research experience working with FSWs and other vulnerable populations, and trained according to the World Health Organization guidelines for research with trafficked women.²⁸

Eligibility criteria included being at least 18 years of age, providing written informed

consent, being biologically female, reporting having exchanged sex for money or goods at least 4 times in the past month with at least 4 different clients, agreeing to treatment if tested positive for HIV or sexually transmitted infections (STIs) detected, and residing in Tijuana or Ciudad Juárez with no plans to move out of these cities in the next 18 months. All participants completed a questionnaire and underwent biological testing for HIV and STIs (syphilis, gonorrhea, and chlamydia) at baseline. Women received US \$20 for their time and travel costs, HIV/STI information, free condoms, and a small referral card with contact information of different agencies that provide free or low-cost health and legal services.

Measures

The primary outcome for the present analysis was first exchanging sex for money before the age of 18 years (i.e., child sex trafficking). Age of child sex trafficking was assessed via the survey question “How old were you the first time you exchanged sex for money (whether that money was given to you or someone else)?” We dichotomized this age as younger than 18 years versus 18 years or older. The predictors of interest were age at first pregnancy, marriage, and sexual violence, the latter of which was measured with the survey question, “How old were you the first time someone forced you to have sex?” On the basis of initial exploratory analyses of these experiences among those who experienced child sex trafficking, we dichotomized all 3 predictors as younger than 16 years versus never or aged 16 years or older. We used younger than 16 years as the age cut-off for these independent variables because previous literature has shown that risk concentrates at younger ages of these experiences. Demographic characteristics assessed included current age (categorized as ≤ 25 years, 26–35 years, or ≥ 36 years), city where recruited (Ciudad Juárez or Tijuana), and education (less than primary school, some or completed secondary school, or more than secondary school).

Statistical Analysis

We generated descriptive statistics for all variables, and conducted the Fisher

exact test to assess for differences in outcome and predictor variables based on sociodemographics and to assess for associations between outcome and predictor variables. We used univariate and multivariate logistic regression models to evaluate associations of pregnancy, marriage, and sexual violence when younger than 16 years with child sex trafficking. We constructed separate models for each predictor of interest as well as combined models including all predictors. We adjusted multivariate models for age, city, and education. We did not detect collinearity among predictor variables when we computed simple pairwise correlations. Lastly, to assess the temporality of pregnancy, marriage, and sexual violence with respect to sex trafficking before aged 18 years, we calculated the proportion who experienced the predictor before, in the same year as, or after being sex trafficked. All tests were 2-tailed, we evaluated statistical significance at a *P* level of less than .05, and analyses were conducted with SAS software, version 9.4 (SAS Institute, Cary, NC).

RESULTS

One fourth of participants were sex trafficked when younger than 18 years,⁷

almost one third had a pregnancy when younger than 16 years (30.3%), 1 in 5 were married when younger than 16 years (20.1%), and nearly 1 in 6 experienced sexual violence when younger than 16 years (16.1%; Table 1). Among those who experienced child sex trafficking, the majority had their first pregnancy (54.3%), marriage (60.2%), and sexual violence experience (55.2%) before they were aged 16 years, marking this age category as a potentially important marker of risk. Nearly a quarter of respondents were currently aged 25 years or younger (24.2%), about a third were aged between 26 and 35 years (34.8%), and 41% were aged 36 years or older (Table 1). Almost half the sample reported having less than a primary school education (44.3%), though those with a pregnancy or marriage when younger than 16 years more commonly had lower educational attainment relative to those whose first experiences occurred at older ages. Both marriage and sexual violence when younger than 16 years were more common in Tijuana than Ciudad Juárez. Correlations between pregnancy and marriage when younger than 16 years ($\rho = 0.29$; $P < .001$) and between marriage and childhood sexual violence when younger than 16 years ($\rho = 0.09$; $P = .02$) were significant but not indicative of collinearity.

Cross-tabulations between the outcome and predictors revealed significantly higher proportions of child sex trafficking among women who experienced pregnancy, marriage, or sexual violence when younger than 16 years compared with those who did not (43.4% vs 18.4%, 41.3% vs 21.4%, and 34.0% vs 23.6%, respectively; all *P*s < .05; Table 2). Crude logistic regression analyses showed that, when examined independently, experiences of any of the predictors of interest when younger than 16 years related to significantly higher odds of child sex trafficking relative to those who had these experiences for the first time at age 16 years or older, or not at all. After we adjusted for age, city, and education, these relationships remained significant. Specifically, the adjusted odds of child sex trafficking were 3.3 (95% confidence interval [CI] = 2.2, 5.1) times higher for women with a pregnancy when younger than 16 years, 2.5 (95% CI = 1.6, 3.9) times higher for those who married when younger than 16 years, and 1.9 (95% CI = 1.2, 3.0) times higher for those who experienced sexual violence when younger than 16 years. When we simultaneously entered these predictors into a combined model, pregnancy (2.8; 95% CI = 1.8, 4.3) and sexual violence (1.70; 95% CI = 1.01, 3.00) when younger than 16 years remained as significant predictors of child sex trafficking, and

TABLE 1—Prevalence and Profile of Adolescent Sex Trade Entry, Pregnancy, Marriage, and Sexual Violence: Tijuana and Ciudad Juárez, Mexico, 2013–2014

Characteristic	Total, No. (%)	Aged < 18 Years at ST Entry, No. (%)	Aged ≥ 18 Years at ST Entry, No. (%)	Aged < 16 Years, Pregnancy		Aged < 16 Years, Marriage		Aged < 16 Years, Sexual Violence	
				Yes, No. (%)	No, No. (%)	Yes, No. (%)	No, No. (%)	Yes, No. (%)	No, No. (%)
Total	...	153 (25.4)	450 (74.6)	159 (30.3)	365 (69.7)	121 (20.1)	482 (79.9)	97 (16.1)	505 (83.9)
Current age, y									
≤ 25	146 (24.2)	47 (30.7)	99 (22.0)	40 (25.2)	76 (20.8)	29 (24.0)	117 (24.3)	16 (16.5)	130 (25.7)
26–35	210 (34.8)	51 (33.3)	159 (35.3)	55 (34.6)	128 (35.1)	50 (41.3)	160 (33.2)	39 (40.2)	170 (33.7)
≥ 36	247 (41.0)	55 (36.0)	192 (42.7)	64 (40.3)	161 (44.1)	42 (34.7)	205 (42.5)	42 (43.3)	205 (40.6)
City									
Ciudad Juárez	302 (50.1)	81 (52.9)	221 (49.1)	96 (60.4)	200 (54.8)	49 (40.5)*	253 (52.5)*	31 (32.0)*	271 (53.7)*
Tijuana	301 (49.9)	72 (47.1)	229 (50.9)	63 (39.6)	165 (45.2)	72 (59.5)*	229 (47.5)*	66 (68.0)*	234 (46.3)*
Education									
< primary	267 (44.3)	80 (52.3)	187 (41.6)	87 (54.7)*	160 (43.8)*	70 (57.9)*	197 (40.9)*	44 (45.4)	222 (44.0)
≥ some secondary	236 (39.1)	51 (33.3)	185 (41.1)	60 (37.7)*	140 (38.4)*	41 (33.9)*	195 (40.5)*	34 (35.1)	202 (40.0)
> secondary	100 (16.6)	22 (14.4)	78 (17.3)	12 (7.6)*	65 (17.8)*	10 (8.3)*	90 (18.7)*	19 (19.6)	81 (16.0)

Note. ST = sex trade. The sample size was *n* = 603.

**P* < .05.

TABLE 2—Unadjusted and Adjusted Associations of Adolescent Sex Trade Entry With Adolescent Pregnancy, Marriage, and Sexual Violence: Tijuana and Ciudad Juárez, Mexico, 2013–2014

Variable	Aged < 18 Years at ST Entry, No. (%)	Crude OR (95% CI)	Adjusted OR ^a (95% CI)
Separate models			
< 16 y at pregnancy			
Yes	69 (43.4)*	3.4 (2.3, 5.1)	3.3 (2.2, 5.1)
No	67 (18.4)*	1 (Ref)	1 (Ref)
Aged < 16 y at marriage			
Yes	50 (41.3)*	2.6 (1.7, 4.0)	2.5 (1.6, 3.9)
No	103 (21.4)*	1 (Ref)	1 (Ref)
Aged < 16 y at sexual violence			
Yes	33 (34.0)*	1.7 (1.1, 2.7)	1.9 (1.2, 3.0)
No	119 (23.6)*	1 (Ref)	1 (Ref)
Combined model			
Aged < 16 y at pregnancy			
Yes	...	2.8 (1.8, 4.4)	2.8 (1.8, 4.3)
No	...	1 (Ref)	1 (Ref)
Aged < 16 y at marriage			
Yes	...	1.6 (0.9, 2.7)	1.70 (0.99, 2.80)
No	...	1 (Ref)	1 (Ref)
Aged < 16 y at sexual violence			
Yes	...	1.6 (0.9, 2.6)	1.70 (1.01, 3.00)
No	...	1 (Ref)	1 (Ref)

Note. CI = confidence interval; OR = odds ratio; ST = sex trade. The sample size was n = 603.

^aAdjusted for current age, city, and education.

*P < .05.

marriage when younger than 16 years did not reach significance (AOR = 1.70; 95% CI = 0.99, 2.80; P = .06). About 48% of participants who had a pregnancy when younger than 16 years were married before or at the same age as getting pregnant (results not shown).

Regarding the temporality of these events, the majority of these experiences before the age of 16 years occurred before or in the same year as being sex trafficked as a minor (Table 3). Among respondents who were sex trafficked as minors,

89.8% had a pregnancy when younger than 16 years, 78.0% had been married before the age of 16 years, and 97% experienced sexual violence before the age of 16 years, all before or in the same year as being sex trafficked. If these experiences happened before or in the same year as being sex trafficked as a minor, they tended to happen at younger ages. Most pregnancies (35.5%) among this group were at age 14 years. Most marriages (34.8%) among this group were when younger than 14 years. Most sexual violence experiences (29.0%) were between ages 10 and 12 years.

DISCUSSION

The findings of this first Latin American population-based study of risks for child sex trafficking quantitatively identified childhood experiences of sexual violence, pregnancy, and marriage as risk factors for sex trafficking in Mexico. Notably, the current study clarifies that, for the majority of participants who started trading sex when they were younger than 18 years, these experiences of pregnancy, marriage, and sexual violence occurred before or at the same age as being sex trafficked. For this group of young women, pregnancy, marriage, or sexual violence more often occurred early in their adolescence (i.e., ages 10–14 years), further identifying potential high-risk groups to target with sex-trafficking prevention. These results suggest that a young girl in northern Mexico presenting with a pregnancy at age 14 years or having experienced sexual violence at age 11 years could have a 1 in 3 chance of subsequently being sex trafficked, a finding that could be particularly relevant to medical and service providers working with children. Such results offer much needed empirical evidence on possible markers for identifying and intervening with those most at risk for child sex trafficking and, subsequently, HIV.

These findings build upon published results from qualitative interviews with a subsample of FSWs who were sex trafficked as minors from the present study's sample.¹⁴ These qualitative results suggested that, among FSWs who were trafficked before they were aged 18 years, previous experiences of sexual violence by someone known to them and adolescent pregnancy were common. Such experiences often led these girls to run away from or be forced to leave their home, creating a context of heightened vulnerability to individuals who coerced them to enter the sex trade. Results from the

TABLE 3—Temporality of Adolescent Pregnancy, Marriage, and Sexual Violence With Respect to Sex Trade Entry Among Those Who Entered Sex Trade in Adolescence: Tijuana and Ciudad Juárez, Mexico, 2013–2014

Variable	Aged < 16 Years at Pregnancy (n = 69), No. (%)	Aged < 16 Years at Marriage (n = 50), No. (%)	Aged < 16 Years at Sexual Violence (n = 33), No. (%)
Before ST entry	43 (62.3)	28 (56.0)	28 (84.9)
In same year as ST entry	19 (27.5)	11 (22.0)	4 (12.1)
After ST entry	7 (10.1)	4 (8.0)	1 (3.0)

Note. ST = sex trade.

current study are also consistent with those of other studies conducted in the United States and Canada, mostly using convenience samples, that found that children who experience sexual violence and adolescent pregnancy, as well as other experiences that may leave holes in their safety net, may be the most vulnerable to child sex trafficking.^{29–32} Given the regional interconnectedness of sex trafficking, more research is needed throughout North America to systematically assess similarities across risk factors and implications for coordinated prevention.

Previous research on adolescent pregnancy has documented heightened vulnerability to familial rejection, residential instability, school dropout, and both short- and long-term financial insecurity.³³ Such vulnerabilities, especially residential and financial instability, likely provide fertile ground for traffickers to prey upon in recruiting young girls into the sex trade, and could support the chronological relationship observed in this study between pregnancy when younger than 16 years and underage sex trafficking. Similarly, marriage, a social union capable of offering social acceptance and stability, is associated with physical and sexual violence, male-dominated decision-making and control, and reduced sexual negotiation power when the wife is younger than 18 years.³⁴ In the context of child sex trafficking in Mexico and elsewhere, romantic partners have been cited as common perpetrators of coerced initiation into the sex trade who may marry or cohabitate for subsequent years with their victims, a possible explanation for the significant, chronological relationship between marriage when younger than 16 years and child sex trafficking suggested by the results in this study.^{14,33} It may be that such men target young girls for marriage on the basis of both their greater vulnerability to coercion and greater value in the sex trade. This type of male-perpetrated romantic targeting for sex trafficking has been observed in other qualitative research from the region.³³ Further qualitative research is required to test these hypotheses.

Once girls are sex trafficked, they are often very difficult to identify, as many fall out of traditional societal systems, such as schools, child protective services, and health care; opportunities for intervention for HIV risk or other safety risks after being trafficked are few. Thus, identifying those at high risk for

but before child sex trafficking is critical. The findings from the present study provide preliminary evidence that clinical presentation of adolescent pregnancy in Mexico may provide an opportunity to intervene early and prevent child sex trafficking and the damaging sequelae that follow, including HIV risk. Relative to other systems (e.g., legal or social), pregnant adolescents commonly utilize health services, especially public clinics, during pregnancy, even if they are not otherwise accessing health care or attending school.³⁵ Thus, health services and health care providers may be a critical context for targeted, effective, and scalable sex trafficking prevention efforts. Further research is needed to explore the utility of health settings serving large numbers of pregnant adolescents for sex trafficking prevention. Other services that are already working to prevent or support young girls who have had childhood experiences of sexual abuse, marriage, and pregnancy, such as those provided by Mexico's National System for Integral Family Development, the National Institute for Women, or the Ministry of Education, may also provide useful infrastructure on which to develop and integrate prevention strategies for child sex trafficking.

Limitations

The results of this study should be understood in the context of several limitations. The data in this analysis are retrospective reports of events in childhood and adolescence from adult FSWs; thus, they may be subject to self-report and recall biases. Collecting data from adolescents who are currently sex trafficked, while possibly reducing recall bias, is ethically questionable and presents extreme challenges in identifying this hidden population. Adjusted analyses in this study controlled for current age of participant to help account for bias in recall. Self-report of stigmatized experiences like those included in this study may also result in under- or overreporting. In addition, when experiences of pregnancy, marriage, or sexual violence occurred in the same year as sex trafficking, the data in this analysis are unable to distinguish the temporal order of events, though proximity of these events is likely still practically relevant for prevention. Finally, although results may be generalizable to the FSW population in Tijuana and Ciudad

Juárez, they may not represent the experiences of FSWs in other areas of Mexico or in other national contexts.

Conclusions

Experiences of pregnancy, marriage, and sexual violence when girls are younger than 16 years are likely markers of risk for subsequent child sex trafficking in Mexico. These childhood experiences may provide an opportunity to identify adolescent girls at risk for sex trafficking via the clinics and agencies that currently are working to prevent and reduce the harmful impact of underage pregnancy, marriage, and sexual violence in this context. Effective, empirically based prevention strategies are desperately needed to mitigate child sex trafficking, HIV acquisition, and related health consequences. These data provide a critical step forward in informing such efforts. **AJPH**

CONTRIBUTORS

S. C. Boyce led the development of the analysis, article, and revisions. K. C. Brouwer was the principal investigator of the parent study in which this study was nested and thus oversaw the study design and implementation of all data collection and cleaning. D. Triplett conducted the analysis and contributed to the development of the article. A. E. Servin collected data and contributed to the analysis, interpretation of results, and development of the article. C. Magis-Rodriguez contributed to study design and study implementation in Mexico, and reviewed drafts of the article. J. G. Silverman was the principal investigator and oversaw the study design, analysis, and development of the article.

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HUMAN PARTICIPANT PROTECTION

The study was approved by institutional review boards at the University of California San Diego, El Colegio de la Frontera Norte, and Universidad Autónoma de Ciudad Juárez. Informed consent was obtained from all participants.

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