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Substance Use Among Female Sex Workers in Two US-Mexico Border Cities: Associations with Age of Entry

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Abstract

Background: Research has documented consistent associations between entry into sex work as a minor and sexual HIV risk. However, previous studies have not examined whether substance use and related HIV risk are elevated among those who enter sex work under age 18.

Methods: Quantitative data were collected via time-location sampling of 603 female sex workers (FSWs) ages 18 years and older residing in two Mexico-US border cities. Age of entry into sex work (categorized as 15 years or younger, 16-17 years, or 18 years and older) was assessed as a predictor of substance use (forced and voluntary) within the first month post-entry and recent (past 30 days) substance use with clients.

Results: Compared to those who entered as adults, participants who entered sex work at age 15 or younger were significantly more likely to report drug use (AOR=5.2, CI= 2.9-8.9) and forced drug use within the first 30 days of entry (AOR= 6.0, CI=1.9-18.9), as well as past month drug use with clients (AOR= 3.4, CI=1.9-5.8). Similar results were found among participants who entered sex work at age 16-17.

Conclusions: Increased risk of recent substance use with clients indicates continuing elevated risk for those entering sex work at these early ages. Early and forced substance use at entry may underlie the elevated risk of HIV infection consistently observed among this population.

Keywords

Substance use; underage entry; sex work; US-Mexico border; HIV risk

Background

Existing data indicate that females who enter the sex industry underage begin sex work via different pathways than older individuals, such as being forced or coerced into entering (Loza et al., 2010; Servin et al., 2015; Silverman, Servin, Goldenberg, & et al., 2015). Adolescents who enter sex work are more likely to report drug and alcohol use prior to entry, as well as more likely to report substance use at entry compared to adult FSWs (Loza et al., 2010). A small body of work also indicates forced substance use may be prevalent among FSWs who enter underage (Goldenberg et al., 2012). However, little is known regarding how substance use is associated with underage entry and related HIV risk.

The present study aimed to examine the associations between underage entry and scenarios related to substance use (including forced use) within the first month after entering the sex industry, as well as how minor entry relates to recent substance use with clients, among a general sample of FSWs in Tijuana and Ciudad Juárez, Mexico.

Methods

Data Collection:

Data for the current study were collected as part of a longitudinal study aimed to assess the HIV/STI risk environment among FSWs in Tijuana and Ciudad Juárez, Mexico (R01-DA028692 PI: Brouwer & R01-DA033194 01A1 PI: Silverman). The data for the current study is from the baseline survey conducted between August 2013 and October 2014. Participants were recruited using modified time-location sampling in indoor and outdoor venues, with no more than 15 women recruited from one venue. Participants completed a questionnaire via ACASI in either English or Spanish and HIV/STI testing and were compensated for time and travel. Variables of interest for the current study included a) age of entry into sex work, b) substance use within the first month of sex work, c) forced substance use within the first month of sex work, d) past 30-day substance use with clients, and e) various demographics.

The study was approved by Institutional Review Boards (IRB) at the University of California, San Diego (UCSD), El Colegio de la Frontera Norte (El COLEF), and the Universidad Autónoma de Ciudad Juárez (UACJ).

Data Analysis

Chi-square analyses were used to identify associations between demographics and substance use variables, as well as associations between age of entry and substance use. Separate logistic regression models were used to analyze the associations between underage entry and substance use. Demographic variables that were significantly associated with substance use were included in the final adjusted logistic regression models as control variables (current

age, education level, and location of interview). All regression models were presented with 95% confidence intervals, with any $p < .05$ considered statistically significant. Analyses were conducted using The Statistical Package for the Social Sciences (SPSS, version 21).

Results

The majority of participants (75%) entered the sex industry at age 18 or over, 12% entered between 16-17 and 12% entered under age 15 [Table 1].

Regression Analyses

Logistic regression analyses (adjusted for current age, education level, and interview city) revealed that, compared to those who entered sex work as adults, participants who entered as adolescents were significantly more likely to report drug use within the first month of sex work (59% among age 15 or under vs. 26% among those entering as adults; AOR: 5.16, CI: 2.98-8.96, $p < .01$; 43% among age 16-17 vs. 26% among adults; AOR: 2.14, CI: 1.29-3.53, $p < .01$). Participants who entered as adolescents were also significantly more likely to report forced drug use within the first 30 days of entering sex work (9% among age 15 or under vs. 2% among those entering as adults; AOR: 6.01, CI: 1.92-18.86, $p < .01$; 5% among age 16-17 vs. 2% among adults; AOR: 3.52, CI: 0.99-12.41, $p = .05$) compared to participants who entered as adults. Injection drug use was also significantly associated with age of entry, such that those who entered as adolescents were more likely to report injection drug use within the first 30 days of sex work compared to those who entered as adults (17% among age 15 or under vs. 8% among adults; AOR: 2.54, CI: 1.23-5.25, $p = .01$; 16% among age 16-17 vs. 8% among adults; AOR: 2.28 CI: 1.14-4.55, $p = .02$). [Table 2].

Participants who entered sex work as adolescents were also significantly more likely to have used drugs with clients in the past 30-days (5% among age 16-17 vs. 2% among adults; AOR: 3.52, CI: 0.99-12.41, $p = .05$; 5% among age 16-17 vs. 2% among adults; AOR: 3.52, CI: 0.99-12.41, $p = .05$) compared to participants who entered as adults. Past 30-day injection drug use with clients was also significantly associated with age of entry, such that participants who entered at age 16 or 17 were significantly more likely to report past 30-day injection drug use with clients compared to those who entered as adults (32% among age 16-17 vs. 18% among adults; AOR: 2.79, CI: 1.17-6.66, $p = .02$) [Table 3].

Discussion

In this first study of substance use and adolescent entry to the sex trade among a representative sample of FSWs in Mexico, we found that adolescent entry was associated with increased likelihood of multiple indicators of substance use, including forced substance use within the first month in the sex trade, as well as recent substance use.

While underage entry was associated with drug use, injection drug use, and forced drug use within the first 30 days of entering the sex industry, participants who entered at age 15 or under were most likely to report these experiences. Thus, while it is clear that adolescents are more likely to use drugs/alcohol and report forced substance use within the first month of entry into sex trade, those who enter at an earlier age may be at elevated risk. Future

mixed-methods studies are needed to tease apart the underlying mechanisms (e.g., force/coercion into the sex industry) that may be contributing to this elevated substance use risk in order to develop effective programs to reach adolescents in the sex industry and reduce this and other sources of HIV risk.

FSWs who entered underage were also more likely to report recent substance use with clients. It may be that earlier and traumatic experiences of substance use (e.g., forced use) affect the longer-term trajectory of substance use among FSWs. If subsequent research supports this hypothesis, targeting adolescents in the sex trade and their unique vulnerabilities regarding substance use may be an effective strategy for prevention of substance use and related HIV risk. More feasible and ethical would be to reach adolescents prior to entering the sex industry, in order to prevent this entry if possible, and reduce a broad range of harms, including substance use.

Limitations

Due to the cross-sectional study design, causality and direction of observed associations cannot be inferred. Recall bias may have reduced the reliability of responses. In order to address this concern, we adjusted for current age in all logistic regression models, which in combination with age at entry, allows adjustment for length of the recall period related to the first month in sex work.

Conclusions

Given that prior work has consistently shown that entering the sex industry as an adolescents confers greater risk for violence and HIV infection (Goldenberg et al., 2012, 2014; Loza et al., 2010; Silverman et al., 2011, 2015), and the current study expands these findings to include greater risk for early, including forced, and continuing substance based on this same factor, there is a dire need for prevention efforts to reduce entry into sex work among adolescents specifically. Programmatic efforts are also needed to identify adolescents who have already entered the sex industry in order to provide interventions tailored to this specific population to reduce substance use and provide alternatives to sex work.

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Table 1:

Demographics among Female Sex Workers in Tijuana and Ciudad Juarez, Mexico

Variable	Total %(n)
<i>Current Age</i>	
18-24	21(127)
25-30	20(120)
31-36	21(126)
37-42	13(92)
43-48	12(74)
49 and older	13(79)
<i>Age at Entry</i>	
<16	12(71)
16-17	12(82)
18+	74.6(450)
<i>Education</i>	
Primary or less	44(267)
Secondary/some secondary	39(236)
More than secondary	17(100)
<i>Marital Status</i>	
Single	61(369)
Married	39(234)

Table 2:

Associations between First Month Substance Use and Age of Entry Among Female Sex Workers in Tijuana and Ciudad Juarez, Mexico (n=603)

Variable	%(N)	AOR (95% CI)	P-Value
<i>First month alcohol use</i>			
Total Sample	66(402)		
<16	10(40)	.59 (.34-1.02)	0.59
16-17	14(56)	.85(.49-1.47)	n.s.
18+	76(306)	Referent	
<i>First month forced alcohol use</i>			
Total Sample	4(26)		
<16	15(4)	.99(.32-3.12)	n.s.
16-17	8(2)	.63(.14-2.79)	n.s.
18+	77(20)	Referent	
<i>First month drug use</i>			
Total Sample	33(196)		
<16	21(42)	5.16(2.98-8.96)	<0.01
16-17	18(35)	2.14(1.29-3.53)	<0.01
18+	61(119)	Referent	
<i>First month forced drug use</i>			
Total Sample	3(17)		
<16	35(6)	6.01(1.92-18.86)	<.01
16-17	24(4)	3.52(.99-12.41)	.05
18+	4(7)	Referent	
<i>First month injection drug use</i>			
Total Sample	10(63)		
<16	19(12)	2.54(1.235-25)	0.01
16-17	21(13)	2.14(1.29-3.53)	0.02
18+	60(38)	Referent	

Adjusted for interview city, current age, and education level

* Forced injection drug use not reported because it was reported by <1% of the entire sample.

Table 3:

Associations between Past Month Substance Use with Clients and Age of Entry Among Female Sex Workers in Tijuana and Ciudad Juarez, Mexico (n=603)

Variable	%(N)	AOR (95% CI)	P-Value
<i>Past month alcohol use with client</i>			
Total Sample	64(381)		
<16	12(44)	.96(.57-1.73)	n.s.
16-17	4(16)	.79(.47-1.32)	n.s.
18+	75(286)	Referent	
<i>Past month drug use with client</i>			
Total Sample	36(218)		
<16	18(40)	3.37(1.98-5.75)	<0.01
16-17	17(38)	2.11(1.29-3.44)	<0.01.
18+	64(139)	Referent	
<i>Past month injection drug use with client**</i>			
Total Sample	22(48)		
<16	23(11)	2.01(0.83-4.89)	n.s.
16-17	25(12)	2.79(1.17-6.66)	0.02
18+	52(25)	Referent	

Adjusted for interview city, current age, and education level

**
-n=217