

# Health implications of sex trading characteristics in Long Beach, California, USA

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## Abstract

This study examined the comparative health risk behaviors of women who (a) traded sex for money, (b) traded sex for drugs, (c) traded sex for both drugs and money, or (d) did not trade sex. Self-report data were collected from 2369 women who received services through HIV and sexually transmitted infection (STI) testing programs and a subset were tested for HIV, hepatitis B, hepatitis C, and syphilis. Results revealed those women who traded sex only for money used condoms, were tested for HIV, and received the HIV test results more often than the other women. Women who traded sex for both drugs and money reported a significantly higher prevalence of gonorrhea, hepatitis B, and syphilis; were more likely to test positive for hepatitis B, syphilis, and HIV; engaged more often in sex acts without condoms; and were incarcerated for significantly more days. Based on these findings, the targets with greatest potential for STI prevention interventions are female sex workers who trade sex for both drugs and money.

## Keywords

Sex trading, sexually transmitted infections, HIV/AIDS, female inmates, female sex workers

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## Introduction

Female sex workers (FSWs) are women who trade sex for a variety of reasons including to obtain illicit drugs due to a drug dependency, to provide an income for themselves and their children, to get food, to secure a place to sleep, or for protection from dangers when they are homeless. Regardless of the reason, women engaging in sex trading are at great risk for many adverse consequences, including human immunodeficiency virus (HIV) and other sexually transmitted infections (STIs), illicit drug use, and greater risk of incarceration.<sup>1</sup>

### HIV and STIs

Relative to HIV, women who engage in sex trading are less likely to be aware that they were HIV-positive,<sup>2</sup> more likely to be HIV-positive than those who had not traded sex,<sup>3</sup> and more likely to HIV seroconvert.<sup>1</sup> Indeed, a meta-analysis of HIV infection among FSWs in the US found a pooled HIV prevalence of 17.3%.<sup>4</sup>

Not only is it evident that the risk factors for HIV are higher for women who sex trade compared to those who do not, this finding holds true even when controlling for other risk factors such as crack use, duration of injection drug use, and history of STIs.<sup>4,5</sup> As with HIV,

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FSWs are at greater risk for other STIs, with sex trading being associated with the highest rates of STIs among women at methadone treatment facilities,<sup>6</sup> significantly associated with testing positive for Chlamydia and gonorrhea.<sup>7,8</sup>

Contributing to the higher rates of HIV and STIs is the fact that FSWs are more likely to participate in risky types of sex. For example, drug-using women in a national sample who engaged in sex trading were more likely to have anal intercourse than drug-using women who do not sex trade.<sup>9</sup> Women who have condomless anal intercourse are at a greater risk for STIs than women who only have condomless vaginal intercourse.<sup>10–12</sup> There is inconsistent condom use among those who sell sex<sup>13</sup> with women who sex trade being more likely to be pressured into not using condoms with their sex-trading partners.<sup>14,15</sup> Furthermore, women who trade sex for drugs or money and who are HIV-positive are more likely to report inconsistent condom use with casual partners than HIV-positive women who do not trade sex for drugs or money.<sup>16</sup> Although high HIV and STI prevalence rates are consistently reported for sex traders, there has been very little research comparing the health of FSWs to women who do not sex trade.<sup>17</sup>

### ***Illicit drug use***

Sex trading is strongly associated with illicit drug use, with FSWs having significantly higher severity of drug use,<sup>18</sup> and very high rates of injection drug use.<sup>19</sup> In a California study, women who traded sex for both drugs and money used more crack cocaine, powder cocaine, and alcohol, whereas those women who only traded sex for drugs used more amphetamine, heroin, and injected drugs more often.<sup>20</sup> The Houston Arrestee Drug Abuse Monitoring Program found that women arrested for prostitution offenses were more likely to test positive for cocaine, and to self-report crack and powder cocaine use,<sup>21</sup> and a New York study found that people who inject drugs who smoked crack or snorted powder cocaine were more likely to exchange sex.<sup>22</sup> More information about the relationship between illicit drug use and form of sex trading can lead to more targeted and cost-effective interventions.

### ***Incarceration***

FSWs are at very high risk of being incarcerated. Of 720 sex workers in Canada, 62.5% had been incarcerated at some point in time, with FSWs having a very high prevalence and frequency of incarceration.<sup>23</sup> Similarly, a study of women in 20 United States cities found that those who had been incarcerated were significantly more likely to have exchanged sex.<sup>24</sup> Female

methadone maintenance clients who traded sex reported higher rates of incarceration than clients who had not traded sex,<sup>6</sup> and a New York study found that among women who injected drugs, those who had been incarcerated were significantly more likely to be FSWs,<sup>22</sup> and women in San Francisco who had been incarcerated were significantly more likely to have traded sex for money or drugs, and to have ever injected drugs.<sup>25</sup> Incarceration is a result of drug policies and policies prohibiting the sale of sex. Because of the high rates of incarceration among FSWs, there is a need for information concerning the health concerns of the incarcerated women.<sup>26</sup> For instance, the duration of incarceration is associated with sexual partnerships that have high STI/HIV risk.<sup>27</sup>

### ***Purpose of study***

Most of the literature treats FSWs as a uniform, homogenized group, regardless of whether they trade sex for drugs, money, or both. A few researchers have differentiated among FSWs by categorizing these women into: (a) those who traded sex for drugs, (b) those who traded sex for money, and (c) those who traded sex for both drugs and money.<sup>28</sup> These researchers found differences among the three groups, including that those who traded for both drugs and money were more likely to smoke crack cocaine. Similarly, in our prior research, we found that women who traded sex for both drugs and money used both crack and powder cocaine and alcohol more, were more impulsive, and were older.<sup>20</sup> Another study that collapsed those who trade drugs for money with those who trade for both drugs and money, and compared this group with those who traded only for drugs, found that those who traded only for drugs were more at risk for HIV.<sup>29</sup> In the current study, we expanded on this model by comparing these three groups of women who sex traded, with women who have never sex traded, on STI and HIV history, age of first use of different illicit drugs, and lifetime history of incarceration. By including women who have never sex traded, our study provides a more thorough examination of the risks faced by women who sex trade.

### ***Methods***

The research protocol was approved by the Institutional Review Board at California State University, Long Beach and all participants signed the approved Informed Consent Form. Participants were women recruited through HIV and STI testing programs operated by the Center for Behavioral Research and Services (CBRS) in Long Beach, California from 2000 to 2014. CBRS is located in a low-income neighborhood that is between two gang-

injunction areas. Participants were compensated from \$5 to \$20, depending on the study in which they were enrolled. Participants who are recruited into studies at CBRS have the options of getting free HIV and STI testing. This recruitment protocol encourages testing and encourages high-risk populations, such as woman who sex trade, to be sampled. Given this recruitment protocol and the geographic location of CBRS, a diverse sample of participants was obtained.

All participants were administered the Risk Behavior Assessment (RBA), a structured interview developed by the Community Research Branch of the National Institute on Drug Abuse in collaboration with the AIDS Cooperative Agreement program grantees. In addition to demographics, the RBA asks respondents to provide detailed information regarding their recent and lifetime drug use, drug treatment, and sexual activity, as well as information regarding their health, employment, arrests, and work and income. For most items, the questionnaire uses a time reference of 30 days, chosen because recalling the frequency of recurrent behaviors beyond 30 days may be difficult or inaccurate. Some drug use items also use lifetime and 48 hours as reference points. The questions on sex trading were: 'Have you ever given sex (tricked) to get drugs?' and 'Have you ever given sex to get money?' The question on sexual preference was 'Do you consider yourself to be...heterosexual, gay (ask of males),

lesbian (ask of females), bisexual, other (specify)?' Reliability and validity for most items have been reported as good.<sup>30-37</sup> Participants were categorized based on their responses to questions asking whether they had ever sex traded for drugs and money.

A subset of 1321 women were offered testing for various infections including HIV, hepatitis A, hepatitis B, hepatitis C, syphilis (tested via TPPA and RPR), Chlamydia, and gonorrhea. Testing was completed after the participants completed the RBA.

The analysis plan was intended to report on the descriptive data across the four different groups. For continuous dependent variables, we report one-way ANOVA with pairwise comparisons performed with the Tukey's Studentized Range Test.<sup>38</sup> The ordinal data were analyzed with the Kruskal-Wallis one-way ANOVA by ranks,<sup>39</sup> with pairwise comparisons performed with the Dwass, Steel, Critchlow-Fligner method.<sup>30,40,41</sup> The categorical data were analyzed as Chi square test of homogeneity.<sup>31</sup>

## Results

Table 1 shows descriptive characteristics of the sample. Of the 2369 women, 251 reported having ever traded sex for money, 76 for drugs, 625 for money and drugs, and 1417 did not trade sex. Regarding cultural heritage, the sample self-identified themselves primarily as

**Table 1.** Descriptive characteristics of sample.

	Drugs only <i>n</i> = 76 <i>n</i> (%)	Money only <i>n</i> = 251 <i>n</i> (%)	Drugs and money <i>n</i> = 625 <i>n</i> (%)	Neither drugs nor money <i>n</i> = 1417 <i>n</i> (%)	$\chi^2$	<i>df</i>	<i>P</i>
Racial-ethnic group							
Black	12 (15.79)	121 (48.21)	309 (49.44)	423 (29.85)			
White	37 (48.68)	73 (29.08)	189 (30.24)	430 (30.35)			
Hispanic	17 (22.37)	29 (11.55)	96 (15.36)	381 (26.89)			
Asian/Pacific	1 (1.32)	3 (1.20)	2 (0.32)	67 (4.73)			
Native	4 (5.26)	8 (3.19)	10 (1.60)	35 (2.47)			
Other	5 (6.58)	17 (6.77)	19 (3.04)	81 (5.72)	157.08	15	.0001
Homeless	37 (48.68)	121 (48.4)	330 (53.05)	344 (24.47)	182.74	3	.0001
Sexual orientation							
Heterosexual	48 (64.86)	154 (61.85)	382 (61.71)	1050 (74.57)			
Lesbian	7 (9.46)	8 (3.21)	47 (7.59)	160 (11.36)			
Bisexual	19 (25.68)	87 (34.94)	190 (30.69)	198 (14.06)	114.61	6	.0001
	<i>M</i> ( <i>SD</i> )	<i>M</i> ( <i>SD</i> )	<i>M</i> ( <i>SD</i> )	<i>M</i> ( <i>SD</i> )			
Education <sup>†</sup>	3.69 (1.92) <sub>c</sub>	3.69 (4.39) <sub>b</sub>	3.79 (1.87) <sub>a</sub>	4.42 (1.89) <sub>abc</sub>	98.41 <sup>‡</sup>	3	.0001
Income <sup>§</sup>	1.51 (0.89) <sub>c</sub>	1.51 (0.75) <sub>b</sub>	1.60 (0.76) <sub>a</sub>	1.92 (1.16) <sub>abc</sub>	53.55 <sup>‡</sup>	3	.0001
Age in years	37.55 (10.33) <sub>ad</sub>	41.57 (8.86) <sub>cd</sub>	39.59 (10.13) <sub>ab</sub>	35.03 (12.27) <sub>bc</sub>	48.49 <sup>  </sup>	3,2189	.0001

<sup>†</sup>Scale is 0 = No formal schooling, 1 = Eighth grade or less, 2 = Less than high school graduation, 3 = GED, 4 = High school graduation, 5 = Trade or technical training, 6 = Some college, 7 = College graduation.

<sup>‡</sup>Kruskal-Wallis comparisons were done with the Dwass, Steel, Critchlow-Fligner method.

<sup>§</sup>Scale is 1 = Less than \$500, 2 = \$500-\$999, 3 = \$1000-\$1999, 4 = \$2000-\$3999, 5 = \$4000-\$5999, 6 = \$6000 or more.

<sup>||</sup>F value for one-way ANOVA. The ANOVA pairwise comparisons were done with the Tukey's Studentized Range (HSD) Test. Means in a row sharing subscripts are significantly different from each other.

African American, White, or Hispanic, with smaller numbers identified as Asian/Pacific Islander, Native American, and Other. Participant ages ranged from 12 to 100 years, with a mean of 37.3 years. Participants who were aged 12–17 years were able to give their own consent under California State Law.

As shown in Table 1, African Americans were more likely to trade sex for both drugs and money, and Hispanics were less likely to trade for money only. Those women who traded for both drugs and money were more likely to be homeless. Those women who traded only for money were more likely to be bisexual. All three groups of FSWs had lower education, lower income, and older age than those women who did not trade sex.

Table 2 shows sexual behavior and reveals an interesting pattern in that those women who traded sex for both money and drugs had the highest frequencies of sexual acts *without* using condoms, which was significantly different from women who traded only for money in the case of both oral sex and anal intercourse. In comparison, those women who traded only for money had the highest frequencies of sexual acts *with*

condoms. With the three separate behaviors combined, findings reveal that those who traded sex for both drugs and money are significantly higher on condomless sex acts than the other three groups.

Table 3 shows incarceration history and age at first drug use. Results revealed that women who traded for both drugs and money reported significantly more days incarcerated in their lifetimes than all other groups. Relative to age at first drug use, the sex-trade-for-drugs-only group had significantly younger ages of first use of alcohol, marijuana, and speedball (combination of heroin and cocaine). The women who did not trade sex had a lower age of first use for amphetamine.

Table 4 provides information on the women's HIV and STI history. Although women who traded sex for drugs only were more likely to have ever received an HIV test, the women who traded sex for money only received more HIV blood tests and were more likely to have received their test results. Those women who traded for both drugs and money had higher risk perception for HIV infection, which may be related to their having significantly more sex partners in general, and more sex partners who were drug injectors.

**Table 2.** Sexual behavior in last 30 days by sex trading categorization.

Behavior	Drugs only M(SD)	Money only M(SD)	Drugs and money M(SD)	Neither drugs nor money M(SD)	F	df	P
Penis–vagina	3.0 (6.41) <sub>bd</sub>	8.0 (13.73) <sub>cd</sub>	8.5 (15.03) <sub>ab</sub>	4.8 (10.86) <sub>ac</sub>	15.40	3,2189	.0001
Penis–vagina condom	0.5 (1.41)	2.5 (8.72) <sub>a</sub>	1.5 (5.17)	1.1 (5.86) <sub>a</sub>	4.45	3,2188	.004
Mouth–penis	2.0 (5.54) <sub>a</sub>	3.5 (10.32)	5.3 (12.46) <sub>ab</sub>	1.9 (6.22) <sub>b</sub>	20.09	3,2189	.0001
Mouth–penis condom	0.1 (0.66)	1.4 (9.35) <sub>a</sub>	0.8 (8.01) <sub>b</sub>	0.1 (0.98) <sub>ab</sub>	5.91	3,2187	.0005
Penis–anus	0.9 (0.33)	0.9 (0.32)	0.8 (0.36) <sub>a</sub>	0.9 (0.27) <sub>a</sub>	9.04	3,2192	.0001
Penis–anus condom	0.09 (0.74)	0.14 (1.08) <sub>a</sub>	0.14 (1.08)	0.03 (0.37) <sub>a</sub>	2.85	3,2187	.0362
Total condomless sex	5.2 (11.28) <sub>a</sub>	8.4 (13.13) <sub>b</sub>	12.17 (20.47) <sub>abc</sub>	6.5 (13.68) <sub>c</sub>	18.10	3,2184	.0001
Number of sex partners	1.1 (1.94) <sub>a</sub>	2.4 (5.96) <sub>c</sub>	2.6 (5.87) <sub>ab</sub>	0.8 (1.25) <sub>bc</sub>	36.70	3,2191	.0001
Number of sex partners who were drug injectors	0.3 (0.48)	0.2 (0.72) <sub>a</sub>	0.79 (3.01) <sub>ab</sub>	0.1 (0.65) <sub>b</sub>	22.82	3,2162	.0001

Means in a row sharing subscripts are significantly different from each other on the Tukey's Studentized Range test. Sex acts where condom is not specified include sex both with and without use of a condom.

**Table 3.** Incarceration history and age at first drug use, by sex trading characteristic.

Behavior	Drugs only M(SD)	Money only M(SD)	Drugs and money M(SD)	Neither drugs nor money M(SD)	F	df	P
Days incarcerated	575.7 (1080.29) <sub>b</sub>	712.9 (1641.35) <sub>ad</sub>	1238 (2012.32) <sub>abc</sub>	331.6 (1062.23) <sub>cd</sub>	55.96	3,2277	.0001
Age first use alcohol <sup>†</sup>	13.1 (3.31) <sub>bd</sub>	15.1 (5.73) <sub>cd</sub>	13.6 (4.13) <sub>ac</sub>	15.9 (4.73) <sub>ab</sub>	36.21	3,2075	.0001
Age first use marijuana <sup>†</sup>	13.8 (4.03) <sub>bd</sub>	15.70 (5.33) <sub>cd</sub>	14.31 (3.62) <sub>ac</sub>	15.94 (4.73) <sub>ab</sub>	25.50	3,1808	.0001
Age first use speedball <sup>†</sup>	22.7 (7.84)	27.5 (9.11) <sub>a</sub>	23.69 (6.82) <sub>a</sub>	24.3 (8.44)	3.11	3,395	.0265
Age first use amphetamines <sup>†</sup>	21.7 (9.02)	23.5 (9.24) <sub>a</sub>	22.9 (9.76) <sub>b</sub>	20.61 (7.51) <sub>ab</sub>	6.27	3,955	.0003

Means in a row sharing subscripts are significantly different from each other on the Tukey's Studentized Range Test.

<sup>†</sup>If a participant had never used a drug, then they were coded to missing on age of first use of that drug.

**Table 4.** HIV testing history and STI status by sex trading categorization.

	Drugs only n(%)	Money only n(%)	Drugs and money n(%)	Neither drugs nor money n(%)	$\chi^2/F$	df	P
Ever HIV tested <sup>†</sup>	75 (98.68)	223 (92.15)	573 (92.72)	1106 (78.83)	88.88	3	.0001
Got results <sup>‡</sup>	56 (73.68)	243 (80.25)	473 (77.04)	838 (59.77)	81.77	3	.0001
Times HIV test in life	4.4 (6.57)	5.9 (7.06) <sub>a</sub>	5.7 (6.95) <sub>b</sub>	3.6 (6.14) <sub>ab</sub>	19.33	3,2335	.0001
Times got results	4.0 (6.71)	6.0 (9.26) <sub>a</sub>	5.3 (7.07) <sub>b</sub>	3.3 (6.19) <sub>ab</sub>	18.67	3,2331	.0001
Chance of getting AIDS <sup>#</sup>	1.2 (1.04)	1.3 (1.06) <sub>a</sub>	1.4 (1.11) <sub>b</sub>	0.8 (0.86) <sub>ab</sub>	157.94	3	.0001
Self-report status prior to testing							
Gonorrhea	7 (9.21)	65 (26.00)	201 (32.11)	106 (7.48)	218.61	3	.0001
Chlamydia	21 (27.63)	81 (32.40)	195 (31.35)	223 (15.73)	81.43	3	.0001
Hepatitis B	3 (3.95)	8 (7.23)	73 (11.74)	52 (3.68)	49.49	3	.0001
HIV	1 (1.92)	4 (3.03)	4 (1.27)	3 (0.30)	13.51	3	.003
Syphilis	3 (3.95)	17 (6.80)	107 (17.09)	27 (1.91)	165.63	3	.0001
Genital warts	6 (7.89)	24 (9.60)	66 (10.58)	76 (5.36)	19.87	3	.0002
Genital herpes	10 (13.16)	11 (4.40)	45 (7.20)	38 (2.68)	35.47	3	.0001
Trichomonas	13 (17.11)	45 (18.22)	173 (28.08)	103 (7.39)	153.10	3	.0001
Yeast infection	43 (57.33)	142 (58.20)	395 (64.86)	611 (44.21)	78.32	3	.0001
Lab test results							n tested
Hepatitis A	11 (37.93)	35 (58.85)	90 (46.39)	204 (44.93)	2.58	3	742 NS
Hepatitis B	5 (10.20)	28 (19.31)	115 (32.21)	96 (12.47)	65.49	3	1321 .0001
Hepatitis C	12 (31.58)	37 (34.58)	119 (40.48)	129 (29.77)	9.14	3	873 .0274
TPPA	2 (15.38)	2 (5.41)	22 (22.45)	11 (2.70)			556 .0001 <sup>§</sup>
RPR	0 (0)	0 (0)	9 (9.09)	5 (1.23)			558 .0013 <sup>§</sup>
HIV	0 (0)	1 (1.08)	5 (2.08)	2 (0.49)			1112 .0171 <sup>§</sup>
Chlamydia	0 (0)	2 (3.03)	3 (1.97)	15 (3.18)			710 NS
Gonorrhea	0 (0)	0 (0)	0 (0)	3 (0.64)			710 NS

RPR: rapid plasma reagin; STI: sexually transmitted infection; TPPA: Treponema pallidum particle agglutination.

<sup>†</sup>'Have you had a blood test for HIV?'

<sup>‡</sup>'Did you get the test results?'

<sup>§</sup>Fisher's exact test.

<sup>#</sup>'Which statement best describes your chance of getting AIDS?' 0='no chance = 0%', 1='Some chance = 25%', 2='Half chance = 50%', 3='High chance = 75%', 4='Sure chance = 100%.' Tested with the Kruskal-Wallis test. Value is Chi square. Comparisons were done with the Dwass, Steel, Critchlow-Fligner method.

Relative to STI history and current test results, FSWs who traded sex for both money and drugs were more likely to report ever having had gonorrhea, hepatitis B, syphilis, genital warts, trichomonas, and yeast infections. They were also more likely to be positive on laboratory tests for hepatitis B, hepatitis C, syphilis, and HIV. The FSWs who traded sex only for money were more likely to self-report being positive for both Chlamydia and HIV.

## Discussion

This study supports other studies of FSWs, which found differences among women based on whether they traded sex for money, drugs, or both.<sup>20,28,29</sup> By categorizing FSWs into those who trade only for money, those who trade only for drugs, those who trade for both money and drugs, and those who do not trade sex, we elaborated upon these findings and found that those who trade for both drugs and money have a higher

overall risk profile than women who trade sex for only money or only drugs. More specifically, FSWs who trade sex for both money and drugs have more sex without using condoms; have a greater number of sex partners and sex partners who inject drugs; self-reported having had most of the STIs that we inquired about; were more likely to test positive on laboratory tests for hepatitis B, hepatitis C, syphilis, and HIV; and had spent substantially more time incarcerated. The women in this group also were more likely to be homeless which implies that less power and lower ability to negotiate the sex exchange encounter. Women in San Francisco who HIV seroconverted had a greater number of sex partners which is consistent with the HIV risk for this group.<sup>1</sup> This higher risk for HIV is reflected in their higher risk perception for HIV.

Results show that FSWs who trade sex for money only appear to be more functional in terms of managing their health and risks. This may be because in this part of Los Angeles County they are more likely to be



independent contractors who sell sex on the street as an income-generating enterprise, rather than selling sex because of a drug dependency.<sup>32</sup> Drug dependency with its attendant withdrawal symptoms creates conditions for increasing HIV risk such as exchange sex when the woman is desperate to alleviate withdrawal symptoms.<sup>22</sup> They also have decreased ability to negotiate for risk reduction methods such as the use of condoms. These conditions would not be as likely for women who are not exchanging sex for drugs. FSWs who trade sex only for money obtain more HIV testing, are more likely to ever return for test results, return for test results more often, and have more condom-protected sex than those who trade for both money and drugs. The finding of women who only trade for money being more likely to use condoms was also found in an earlier study.<sup>28</sup> They are less likely than expected to be Hispanic and more likely than expected to be bisexual. The fact that they were more likely to receive their HIV test results may account for a higher proportion of this group reporting that they had been infected with HIV even though they were not higher on the laboratory tests for HIV.

FSWs who only traded for money were significantly older than the other groups. Older age appears to be associated with lower disease incidence. Factors associated with HCV infection in Poland have been found to be younger age in women.<sup>33</sup> A Canadian study found that new HCV infections were more likely to be 15–34 years of age.<sup>34</sup> This may have to do with age of initiation of risk behaviors. The FSWs who only traded for drugs had significantly earlier ages of first use of alcohol, marijuana, and speedball, whereas those who traded only for money had older ages of first use of speedball and amphetamines. Age of initiation of commercial sex work has been found to be associated with illicit drug injection.<sup>35</sup> Early initiation of sex work significantly increases risk of HIV infection and prostitution arrests.<sup>36</sup> Sexual transmission of HIV is substantial in FSW populations.<sup>37</sup>

Findings also revealed a major effect of incarceration for FSWs who trade sex for both drugs and money, with this group spending significantly more days in their lifetime being incarcerated than any of the other three groups. This difference was dramatic, with the group who trades for both drugs and money being incarcerated for over 1200 days in their lifetimes which is significantly greater than the days incarcerated for any of the other three groups of women and more than twice those trading only for money. The Los Angeles County Sheriff department reports that for 2017 the central division had 277 arrests of adult females for misdemeanor sex offenses and only 4 for felony sex offenses. There was a far larger number of female adults arrested for narcotics at 644.<sup>42</sup> The

women who exchanged sex in our study were mostly street-based sex workers who largely work as independent providers of sex.<sup>32</sup> Nationally, it has been found that the average arrest rates for narcotics were positively and independently associated with HIV prevalence.<sup>43</sup> This is consistent with the findings that this group had more incarceration which implies more arrests, and more HIV infection than the other three groups. The longer a woman has been incarcerated in her lifetime, the more likely she is to have high-risk sexual partners.<sup>27</sup> Female prisoners are much more likely to have a drug problem than male prisoners.<sup>5</sup> Even among women who inject drugs, those women who had been incarcerated in New York were more likely to exchange sex.<sup>22</sup> Incarcerated women are more likely to report pulmonary disease and cardiovascular disease.<sup>44</sup> They are also more likely to have dental, female reproductive (such as lack of menses and endometriosis), abnormal breast lumps, fibromyalgia, miscarriages, and physical injuries.<sup>45,46</sup> Incarcerated women have chlamydial infection rates more than 70 times greater than the statewide prevalence for the general population in Rhode Island and similar results are not found for men. A consistent Chlamydia and gonorrhea screening protocol for female inmates for women younger than 30 would identify 60% of the cases, which leads to a recommendation for these types of screening.<sup>47</sup> Given that the prevalence of STIs among incarcerated women who sex trade is high, incarceration represents an opportunity to screen and treat this underserved population.<sup>48</sup> Unfortunately, at the present time, most jails and prisons do not adequately provide for the medical problems of incarcerated women.<sup>5,49,50</sup> There is a dearth of programs dealing with both HIV and economic issues of FSWs in prison and for those recently released from prison.<sup>5</sup>

Our finding that the majority of women trading sex for both drugs and money are also homeless is consistent with the findings of Cobbina and Oselin<sup>51</sup> who identified four reasons for FSWs, depending upon the age at which the woman was initiated into sex work. Two reasons for sex trading among those with adolescent initiation were to reclaim control of their sexuality after childhood or adolescent sexual assault, which may be what happened to our drugs-only group who had younger ages of first use of alcohol, marijuana, and speedball. Initiation into sex trading as an adult can lead to a need to sustain the drug addiction, with sex trading as the only means for low-income women lacking other skills to earn enough money to support a drug habit. Those women who were homeless may have less power and lower ability to negotiate for what they can exchange for.

## Limitations

Our study did not have information on whether the sex trading was voluntary or involuntary or whether there was a change in the voluntary versus coerced sex trading for the groups who traded for either drugs, money, or both over the lifetimes of the women. Golder and Logan<sup>52</sup> note that women's motives for sex trading appear to change over time, and sex trading activity intensity may wax and wane depending upon circumstances. Our study was cross-sectional in nature so we were not able to examine how sex trading varied over time. We did not have data on the physical setting of the sex work, whether brothel, street, or other.<sup>5</sup> We also did not cover the issue of survival sex which is when FSWs trade sex for food, a place to sleep, or other necessities of daily life.<sup>53–55</sup> Although we did ask for number of sex partners and number of sex partners who were drug injectors, we did not ask for relationship status nor whether the partners were regular or different partners. We also did not ask for information that would have allowed data interpretation relative to control and power, both of which may have impacted sex exchange for drugs or money.

## Conclusion

In summary, these results highlight the need for prevention and intervention measures to be established, especially for FSWs who trade sex for both drugs and money. Prevention and intervention efforts should include both targeted STI counseling and testing, and greater access to free condoms. FSWs who trade sex for both money and drugs experience greater lifetime years of incarceration than other groups of FSWs and addressing the public health issues of condom use and obtaining test results within the criminal justice system would be an excellent opportunity to intervene. The Committee on Health Care for Underserved Women of the American College of Obstetricians and Gynecologists noted that sex work often is not recognized in most obstetric and gynecologic practices and that data on sex work among U.S. adult women are lacking, making provision of services for this population difficult to assess.<sup>56</sup> Our study reported on FSWs with high levels of incarceration, HIV, and other STIs. Given the increasing rates of incarceration of women over time, and epidemiological findings concerning the increase in syphilis infection in the U.S. population, understanding the role of sex work in women's lives remains a significant concern.




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