HIV Prevalence and Associated Risk Factors among Female Truck Stop and Street Sex Workers

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INTRODUCTION

Female sex workers have disproportionately high rates of HIV compared to the general population due to unique behavioral and structural risk factors. While there are well established risk factors associated with HIV, there is a lack of US population-based studies among vulnerable groups of sex workers due to the transient and illegal nature of exchanging sex for survival, drugs, or money. This study adds to the current gap in literature by analyzing characteristics within HIV positive individuals of the hard-to-reach population of truck stop and street sex workers in Texas.

Study Aims:

- Identify risk factors associated with HIV among female truck stop and street sex workers
- Evaluate the observed HIV prevalence rate in the context of the female sex worker population in the US

METHODS

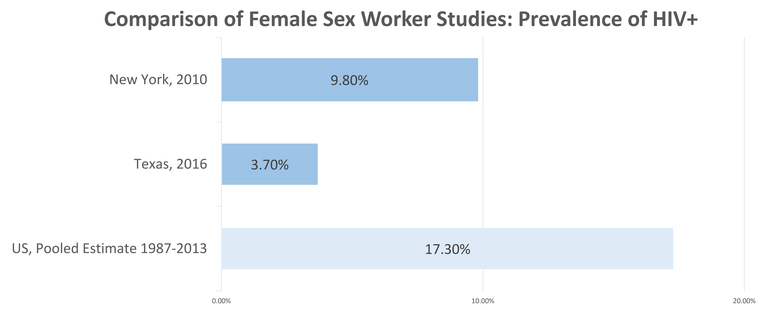
This cross-sectional study was conducted as a secondary analysis of 1138 women in substance use treatment and with histories of sex exchange, whose data was originally collected from 2012-2016 through a street level cervical cancer prevention services program in Dallas, Texas. The parent project administered self-reported medical history forms and conducted well woman exams. HIV/STI screens were conducted by venipuncture and tested using antibody testing.

For this project analysis, age, race/ethnicity (dichotomized to white and nonwhite), mental illness within past six months (yes/no), number of sex partners, and condom use (always categorized as yes; sometimes or never categorized as no). HIV/STI results were abstracted from lab reports. SAS statistical software (Cary, NC) was used to calculate prevalence proportions and chi-square test, fisher's exact test, and t-test p values (α criteria = 0.05).

RESULTS

Prevalence of Sociodemographic, Behavioral, and STI Screen Results by HIV Status among Truck Stop and Street Sex Workers in Dallas Texas, 2012-2016

Variable	HIV Positive (n = 11) n (%)	HIV Negative (n = 1116) n(%)	p-value
Age (years)			
18-25	0 (0)	232 (21)	p < 0.01
26-35	1 (9)	500 (45)	
36+	10 (91)	384 (34)	
Race			
White	3 (27)	722 (65)	
Nonwhite	8 (73)	373 (33)	p = 0.01
Missing	0 (0)	21 (2)	
Homeless			
Yes	4 (36)	210 (19)	
No	5 (46)	718 (64)	p = 0.13
Missing	2 (18)	188 (17)	
Mental Illness			
Yes	8 (73)	378 (34)	p= 0.03
No	3 (27)	610 (55)	
Missing	0	128 (11)	
Sex Partners			
50+	4 (36)	278 (25)	
<50	5 (46)	798 (72)	p = 0.25
Missing	2 (18)	40 (3)	
Vaginal Condom Use			
Yes	4 (36)	92 (8)	
No	6 (55)	975 (87)	p < 0.01
Missing	1 (9)	49 (5)	
STI+ Screening Results			
Oral Gonorrhea	0 (0)	24 (100)	---
Oral Chlamydia	0 (0)	16 (100)	---
Anal Chlamydia	0 (0)	79 (100)	---
Anal Gonorrhea	0 (0)	32 (100)	---
Cervical Chlamydia	0 (0)	66 (100)	---
Cervical Gonorrhea	0 (0)	31 (100)	---
Syphilis	4 (12)	29 (88)	p < 0.01
Hepatitis B	1 (14)	6 (86)	p = 0.07
Hepatitis C	3 (2)	136 (98)	p = 0.15



CONCLUSIONS

HIV prevalence was observed to be 0.98% in this Texas study. This prevalence is notably lower than the pooled estimate from 14 US studies investigating HIV prevalence among female sex workers (17.3%). Given the heterogeneity of studies in the systematic review, further assessment was given to a more comparable New York study of African American female sex workers conducted around the same time as our study. When stratified by race, HIV prevalence among African Americans was observed to still be higher in our study (3.7%, data not shown) compared to the New York study (New York: 9.8%). Reasons for this difference are unknown but may be due to a volunteer bias.

Older age, nonwhite race, history of mental illness, and not using condoms were found to be associated with HIV+. HIV's association with syphilis agrees with previous studies, but not with hepatitis findings which is likely due to small number of positive hepatitis screens. Sexual partners was not observed to be associated with HIV status (p=0.25), even after controlling for condom use (data not shown). Because this association is based on having greater than 50 sex partners, findings suggest there may be a threshold effect similar to HPV infection.

Study limitations: Except for STI screen results, other factors assessed were self-reported and could be reflecting a social desirability bias. Sample size was small and multiple comparisons were performed, increasing chances of reaching statistical significance by chance. Due to convenience sampling, representativeness and generalizability to other sex workers populations and the diverse hierarchical sex worker structure is unknown.

Findings demonstrate the need for targeted HIV screening and prevention efforts, particularly to African Americans, in this marginalized population.

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