

HIV and Sexually Transmitted Infections among Female Sex Workers in Iran: Findings from the 2010 and 2015 National Surveillance Surveys

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Introduction

Globally, female sex workers (FSWs) are among those sub-groups disproportionately affected by sexually transmitted infections (STIs).¹ FSWs are often socially marginalized, even before the law intervenes; given several existing individual and structural barriers, they are still among the groups with highest risk for HIV, with the overall HIV prevalence as high as 30.7% in low and middle income countries.²

In many countries, especially among those Middle East and North Africa (MENA) region, there is a dearth of evidence on HIV prevalence among FSWs. Iran, as one of the populous one, is known as the pioneer of HIV prevention and programs among FSWs. To monitor the HIV epidemic among FSWs, the first national bio-behavioral surveillance survey was carried out in 2010; five years later the second survey was conducted. Here we present the results among Iranian FSWs in two repeated surveys assessed the prevalence of HIV (2010 and 2015) and other STIs (only in 2015).

Methods

We conducted a facility-based and street-based outreach sampling at 21 sites (25 in 2010) in 13 cities (12 in 2010)³ (See **Map 1**) to recruit women aged ≥ 18 reported selling sex to more than one male client in the past 12 months. The facilities were a combination of Non-Governmental Organizations (NGO) and public STD clinics serving vulnerable women, which include FSWs.

Consenting FSWs were interviewed—face-to-faced— using a standard behavioral questionnaire including demographic, risky sexual and drug-related behaviors; and then tested for HIV and five other STIs (syphilis, Gonorrhea, Chlamydia, Trichomoniasis, Human Papillomavirus).

FSWs were tested using HIV and Syphilis Rapid Diagnostic Tests (RDT), and positive HIV RDT results were confirmed with second RDT. The participants were instructed to self-administer vaginal swab, which consists of inserting a Dacron cotton swab into the vagina and rotating the swab several times to collect cells from the vaginal walls.

Results

• HIV prevalence; 2010 and 2015

In 2015, the HIV prevalence was 2.1% (vs. 4.0% in 2010, p-value 0.007). Lifetime drug use and injection was reported by 59.8% (vs. 73.8% in 2010, p-value <0.001) and 6.1% (vs. 13.6% in 2010, p-value <0.001), respectively. In those with history of drug use, the HIV prevalence was 2.8% (vs. 4.2% in 2010, p-value 0.242) and in FSWs who ever injected drugs, it increased to 8.6% (vs. 9.8% in 2010, p-value 0.425) (See **Figure 1** and **Table 1**)

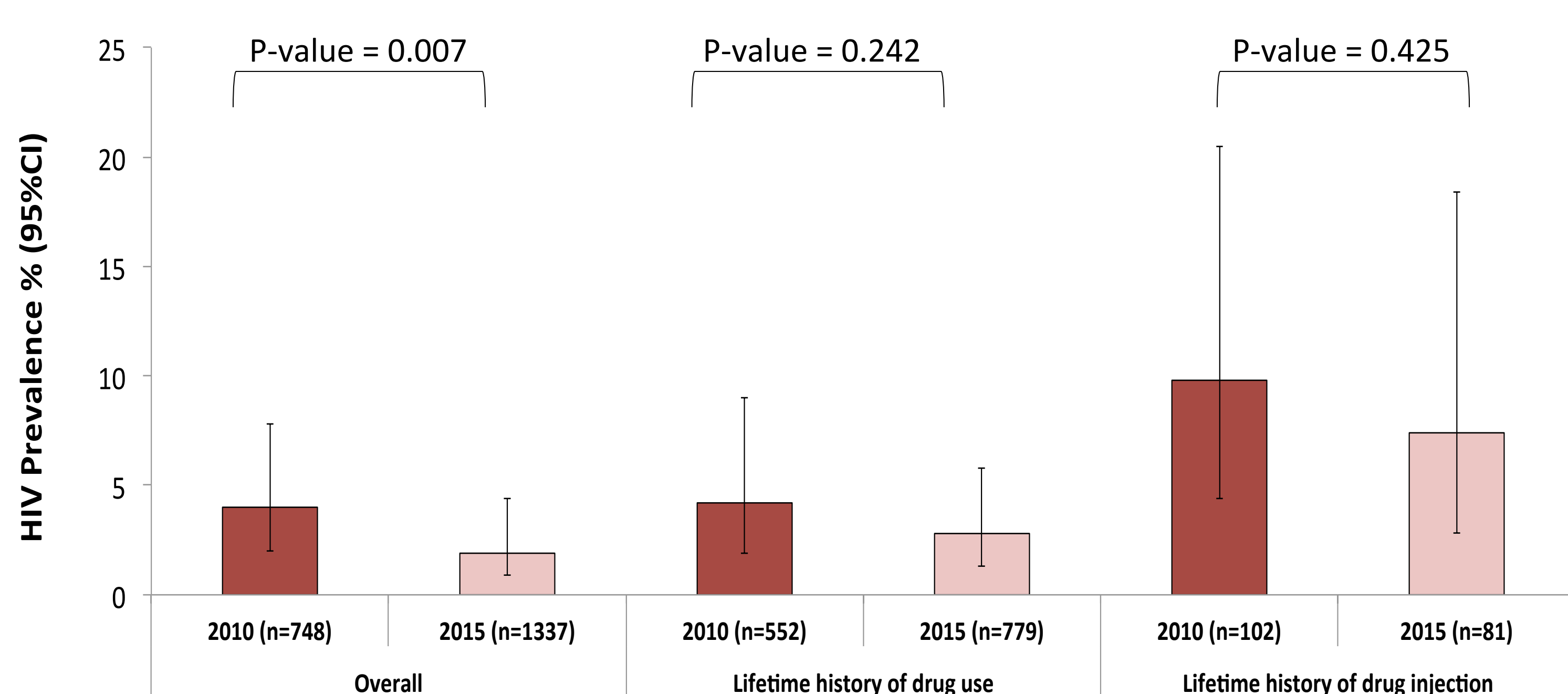


Figure 1: HIV prevalence overall and in subgroups of FSWs in 2010 and 2015, Iran

• Predictors of HIV prevalence; 2010 and 2015

After adjustment for behavioral and demographic covariates, we found that being illiterate, receiving free condom, any history of drug use or injection were associated with higher prevalence of HIV in 2015 (**Table 2**).

• STI prevalence; 2015

Prevalence of other STIs in 2015 ranged from 4% syphilis to 41.8% for Human Papillomavirus: Syphilis 0.4% (95%CI: 0.2, 1.0); Gonorrhea: 1.3% (95%CI: 0.8, 2.1); Chlamydia: 6.0% (95% CI: 4.8, 7.4); Trichomoniasis: 11.9% (95% CI: 8.5, 16.5); Human Papillomavirus: 41.8% (95%CI: 39.2, 44.5)

Map 1: Geographic distribution of study sites (Zahedan was only included in 2015)



Table 1: HIV prevalence overall in subgroups of FSWs

Variables	HIV prevalence (95% CI)		P Value
	Survey 2010 (N=872)	Survey 2015 (N=1337)	
Age group			0.091
<25	0	0.7 (0.1, 5.3)	
≥ 25	5.4 (2.7, 10.2)	2.2 (0.9, 5.0)	
Highest educational level			0.385
Illiterate	7.8 (3.2, 17.7)	5.3 (2.1, 12.3)	
Primary or less	3.1 (1.1, 8.9)	2.1 (0.9, 5.2)	
Middle school and above	3.4 (1.4, 8.0)	1.5 (0.5, 4.2)	
Received free condom			0.522
Yes	2.1 (0.8, 5.8)	2.5 (1.0, 6.1)	
No	5.3 (2.5, 10.7)	0.6 (0.2, 2.1)	
Past-month condom use with partners			0.706
Never	1.6 (0.4, 6.0)	1.6 (0.8, 3.1)	
Occasionally	4.2 (1.4, 12.0)	1.7 (0.6, 4.5)	
Always	2.9 (0.8, 9.6)	3.2 (1.3, 7.8)	
Age at first sex debut			0.129
<15	0	3.7 (0.5, 23.9)	
15-19	2.6 (0.7, 9.7)	2.8 (0.7, 10.8)	
20+	4.6 (2.2, 9.3)	1.8 (0.8, 4.0)	

Table 2: Factors correlated with the HIV prevalence in the two FSW surveys, Iran

Variables	OR (95% CI)	
	2010 survey	2015 survey
Age group		
<25	1	
≥ 25	10.94 (1.91, +Inf)	
Highest educational level		
Illiterate	---	1
Primary or less	---	0.27 (0.10, 0.76)
Middle school and above	---	0.22 (0.08, 0.61)
Received free condom		
No	1	1
Yes	2.37 (0.90, 7.32)	6.23 (1.11, 34.9)
Lifetime drug use		
No	---	1
Yes	---	2.33 (1.13, 4.81)
Ever inject drug		
No	1	1
Yes	2.99 (1.18, 7.21)	5.32 (2.31, 12.3)

Conclusion and recommendation

Overall HIV prevalence among FSWs in Iran is relatively low and stable if not decreasing, which may point to decrease in drug use or injection. It has been strongly associated with increased age, lower education level, lifetime illegal drug use and injection. Also, those who reported receiving harm reduction programs such free condom use in last year were more likely to be infected with HIV. This may indicate this subgroup have greater access to harm reduction programs. Both sexual and injection harm reduction programs need be continued and scaled up to further reduce the HIV transmission in FSWs.

References

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