Injecting and Sexual Networks and Sociodemographic Factors and Dual HIV Risk among People Who Inject Drugs: A Cross-sectional Study in Kermanshah Province, Iran

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Original Article

Abstract

Background: Few studies suggest that social network factors, including size of sexual network may associate with drug-related and sexual high-risk behaviors. The objective of this study is to investigate injecting and sexual networks and sociodemographic factors that might be associated with dual HIV risk (DHR) among people who inject drug (PWID).

Methods: The data from a cross-sectional study of 455 PWID that were recruited through peer-referral sampling were used in this study. The data were collected using a structured questionnaire consisted of modules on sociodemographic characteristics, sexual and injection-related risk behaviors during 12 months before the interview. DHR was defined as engaged in both using a syringe previously used by other PWIDs and unprotected sex during last 12 months. Data analysis was performed with descriptive and logistic regression. In final model, we considered variables with $P < 0.500$ as statistically significant. Finally, reported adjusted odds ratio (AOR) and confidence interval (95% CI) for variables that were significant in the final model.

Findings: A total of 455 men who injected drugs participated in this study. The mean age ± standard deviation (SD) was 33.2 ± 7.3 (range 19-58) years. Overall, the prevalence of DHR In the last 12 months, 38% (95% CI: 18.3-51.2%). Multivariate model showed that regular visit to needle, syringe programs (NSPs) reduced odd of HDR to 50% when adjusted for other covariates, but still remained statistically significant ($P < 0.050$). The odds of reporting DHR was significantly higher in those ≥ 2 sex partners and injection partner ($P < 0.010$). Odds of DHR was higher (AOR: 2.3) among participants who had more than 2 injection per day but was not statistically significant ($P > 0.050$).

Conclusion: DHR was common in PWID in Kermanshah, Iran. Having multiple injecting and sexual partners increased the odds of engaging in dual risk behaviors, but regular visit of NSPs can reduce the DHR among PWID.

Keywords: People who inject drugs; Dual risk behaviors; Social network

Citation: Noroozi M, Mirzazadeh A, Noroozi A, Sharifi H, Higgs P, Jorjoran-Shushtari Z, et al. **Injecting and Sexual Networks and Sociodemographic Factors and Dual HIV Risk among People Who Inject Drugs: A Cross-sectional Study in Kermanshah Province, Iran.** Addict Health 2016; 8(3): 186-94.

Received: 28.01.2016 **Accepted:** 08.04.2016

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Introduction

National reports showed that HIV prevalence concentrated among people who inject drugs (PWID) and sharing syringes has been the main mode of HIV transmission in Iran.[1,2] There are approximately 170000-230000 PWID in Iran, of whom, 15% infected with HIV.[3,4] High risk drug-related behaviors such as sharing of needle, syringe and other drug paraphernalia, and unprotected sex are being considered as the main routes of HIV, other blood-borne diseases and sexually transmitted diseases transmission.[5-8] In Iran, over two-third of all new identified HIV cases have been attributed to unsafe injection.[9-11] Furthermore, high risk sexual practices were reported relatively high in this population.[1] This results to spread of HIV infection among both injection and sexual networks.[12,13] A recent study on the prevalence of HIV infection among male injecting drug users, and their female partners showed that HIV prevalence among female partners was as high as 2.8%.[6] Furthermore, report of National Survey in 2010 showed more than 60% of the PWID reported unprotect sex in their last sexual encounter.[1] Effective HIV prevention interventions for PWID include opioid maintenance treatments (OMTs), HIV testing and counseling programs, needle, syringe programs (NSPs) delivered through fixed-site centers and outreach teams, condom distribution, risk reduction psychoeducation programs, and antiretroviral treatment.[14-17] Although unsafe injection and particularly needle/syringe sharing has declined in Iran with the expansion of legal sources of sterile syringes, many PWID continue to engage in unprotected sex.[9] Similarly, other factors including social network factors may play an important role in risky behaviors among PWID.[18,19] Few studies suggest that social network factors, including size of sexual network, may associated with receptive syringe sharing (RSS) and unprotected sex.[20,21] Many research reported that large networks provide more opportunities for sharing syringes and paraphernalia.[22] The previous studies on risk behaviors associated with HIV infection among PWIDs often focuses separately on injecting and sexual risk, but PWIDs may engage in different types of high-risk behaviors, concurrently.[23] PWID who engage in both using a previously used syringe by someone else and unprotected sex [dual HIV risk (DHR)] are most at-risk for HIV infection as compared to general population of PWID.[20] Many research on PWID showed injecting and sexual risk factors were associated with HIV infection.[8,24] One study from Russia suggest the injection and sexual risks increased the odds of HIV infection among PWID and DHR play an important role in spread of HIV among PWID.[25] To know these factors can help to implement and develop strategies that address DHR among PWID and to reduce DHR among this population. The objective of this study is to explore social network and sociodemographic factors that might be associated with DHR among PWID who are HIV negative according to their self-report to focus on those PWIDs who are at-risk for becoming infected with HIV in Kermanshah, Iran, an urban setting in southwestern part of Iran.

Methods

In this study, data of a cross-sectional survey of PWID were used. We recruited 455 PWID using snowball sampling from September to December 2014, in Kermanshah, a city located in western Iran with over 850000 population. HIV epidemic among PWID was first reported from Kermanshah in 1996. In response to high prevalence of HIV among PWID, harm reduction services were lunched all over the country including Kermanshah city, since 2002. Despite implementation of harm reduction programs including NSPs and OMTs, the prevalence of HIV among PWID is still high in the city. This is why we choose Kermanshah as our study site. Participants included in the study were those who were aged over 18 years, had reported injecting drug use during last month, had been residing in Kermanshah for at least 1 month, were able to speak and comprehend Farsi enough to respond to survey questions, and were able to give informed consent to complete the interview. We invite all potential respondents who met the screening criteria to participate in the study.

A structured questionnaire was administered to respondents by interviewers. The questionnaire included modules on sociodemographic characteristics, sexual behaviors, HIV testing, and participation in harm reduction programs, number of injection-related risk behaviors such as sharing of syringes/needles, number of injecting partners and number of sex partners they had

over the 12 months before the interview. RSS variable which was defined as injecting with a syringe that someone else has already used, derived from a survey question which asked participants about number of PWID which they receive a used syringe from during last 12 months. The responses were dichotomized into ''to have" or "not to have" any receptive sharing during the last 12 months. Data of unprotected sex variable were got from survey questions on engaging in sex without using a condom in the last 12 months by type of sexual partner in the past 12 months (commercial and causal). The responses were dichotomized to ''to have" or "not to have" any unprotected sex in the last 12 months. DHR was defined as engaged in both RSS and unprotected sex during the last 12 months. The social networks reported by PWID–defined as the number of other injectors they had sharing injection (sharing group size) or number of sex partner in the 12 months prior to interview. The prevalence of DHR was calculated for different study subgroups. We initially examined correlation between DHR and social network and sociodemographic factors by logistic regression through the estimation of odds ratios (OR) and 95% confidence intervals (CI). Significant variables ($P < 0.200$) in bivariate analysis were evaluated for collinearity using a correlation matrix. Highly correlated variables (r above 0.4) were compared, and the variable more strongly associated with DHR in the last 12 months was selected for inclusion in the final model. In final model, variable with $P < 0.500$ was considered as statistically significant. Finally, reported adjusted odds ratio (AOR) and 95% CI for variables that were significant in the final model. We conducted all data analysis with Stata (Version 11, Stata Corporation, College Station, TX, USA).

Ethical considerations

No identifying information was collected from questionnaire respondents. Verbal and written consent procedures were provided to all participants before the survey, and they had the right to withdraw from the study at any time without penalty. Research Ethics Committee of the Kerman University of Medical Sciences approved the study questionnaire and protocol (Ethics Code: k/93/204).

DHR reported in 32% of PWID that irregular visit to NSP that was significantly higher than PWID who report regular visit to NSP ($P < 0.050$). In the bivariate analyses, marital status, age at first drug injection, sharing group size, employment status, sex partner, and NSP (protective) were significantly associated with engaging in DHR ($P < 0.050$).

Results

The study data were completed for 455 men who inject drugs. The mean age ± standard deviation (SD) of participants was 33.5 ± 7.6 [interquartile range (IQR): 25.6-42.4] years. The mean, SD and median durations of injection drug use were 6.0 ± 4.6 and 3.2 (IQR: 3.6-11.1) years, respectively. The majority of respondents were single (73%), and 90% had monthly income < 150 USD. The mean and SD age of the first use were 22.4 ± 5.6 and IQR: 20.6-26.1. The demographic characteristics of participants have been described elsewhere.[7]

DHR

DHR was defined as having positive history of receptive and unprotected sex during the last 12 months. Table 1 presents the primary bivariate findings. In the last 12 months, 38% (95% CI: 18.3-51.2%) reported engaging in DHR. Furthermore, the DHR among different subgroups reported in table 1. Surprisingly, 21% of PWID aged below 30 had DHR, significantly higher than older ones. Moreover, 31% of those with homeless had DHR. Regarding marital status, the DHR was significantly higher among single PWID (25%) ($P = 0.020$). 28% of those with unknown hepatitis C virus (HCV) status reported RSS and unprotected sex ($P = 0.050$) that was marginally significant. About 31% of unemployed participants reported DHR ($P = 0.030$). The use of Methamphetamine of use had a statistically significant relationship with DHR ($P = 0.040$). Those who initiate injection before 25-year-old had admitted the more DHR than PWID started injection above 30-year-old (31% vs. 14%). DHR among people who started using drugs through injection between 25 and 30-year-old was 23%. Furthermore, 28% of PWID with DHR reported being tested for HIV but it did not show statistically significant difference with PWID without DHR. 33% of PWID with DHR reported having > 2 sharing partner and also 32% of sample with DHR reported > 2 sexual partner within the last 12 months before the interview, significantly higher than those ≤ 2 sharing partner and sex partner ($P < 0.050$).

Table 1. Dual HIV risk (DHR) in different subgroups of people who inject drug (PWID) (n = 455)

Characteristics	DHR	DHR versus neither	P
	n (%)	COR (95%CI)	
DHR	175 (38)	-	
Age (year)			
< 30	88 (21)	1.8 (0.4-2.8)	0.300
30-39	58 (14)	1.4 (0.7-2.4)	
> 40	29 (7)	1	
Age (mean ± SD)	28.5 ± 7.6		
Current housing status			
Homeless	128 (31)	2.5 (1.4-4.2)	0.020
Home	46 (11)	1	
Marital status			
Single	110 (25)	3.2 (2.2-5.7)	0.020
Married	37 (9)	1	
Occupation			
Employed	46 (10)	1	0.030
Unemployed	140 (31)	3.7 (1.8-5.2)	
Monthly income (USD)			
< 150	127 (28)	1.7 (0.3-2.2)	0.700
> 150	54 (12)	1	
Current self-reported HCV status			
Negative	45 (10)	1	0.050
Positive	82 (18)	1.9 (0.3-2.2)	
Unknown	127 (28)	2.3 (1.3-4.2)	
Current most frequent drug of use			
Heroin	82 (18)	1	0.050
Methamphetamine	123 (27)	1.8 (1.4-2.8)	
Age at first drug use (year)			
< 25	110 (25)	1.8 (0.5-2.2)	
25-29	82 (18)	1.5 (0.7-2.7)	0.200
> 30	63 (14)	1	
Age at first drug injection (year)			
< 25	128 (31)	3.1 (1.2-5.2)	0.030
25-29	95 (21)	2.9 (1.6-5.1)	
> 30	58 (14)	1	
Number of injection per day			
< 2	82 (18)	1	0.030
2 and upper	123 (27)	2.6 (1.3-5.2)	
Years of drug injection			
≤ 3	91 (20)	1	0.400
> 3	141 (31)	2.3 (0.8-4.2)	
Tested for HIV			
Yes	92 (20)	1	0.300
No	127 (28)	1.7 (0.8-3.6)	
Sharing group size			
≤ 2	92 (20)	1	0.010
> 2	150 (33)	4.2 (2.1-8.8)	
Sex partner			
≤ 2	95 (21)	1	0.020
> 2	145 (32)	3.9 (2.5-9.8)	
Visit of NSP			0.010
Regular	63 (14)	0.6 (0.01-0.80)	
Irregular	145 (32)	1	

NSP: Needle and syringe program; HCV: Hepatitis C virus; DHR: Dual HIV risk; COR: Crude odds ratio; CI: Confidence interval, SD: Standard deviation

Table 2. Adjusted odds ratio (AOR) by multiple logistic regression for association of social network and sociodemographic factors people who inject drug (PWID) with Dual HIV risk (DHR)

Characteristics	DHR versus neither AOR* (95% CI)	P
Current housing status		0.020
Stable	1	
Unstable (homeless)	2.5 (1.4-5.4)	
Marital status		0.020
Married	1	
Single	3.2 (2.1-6.2)	
Employment status		0.100
Employed	1	
Unemployed	1.8 (0.9-2.6)	
Current self-reported HCV status		0.001
Positive	1	
Negative	1.9 (1.5-6.2)	
Unknown	3.2 (1.8-7.1)	
Current most frequent drug		
Heroin	1	0.300
Methamphetamine	1.8 (0.8-3.2)	
Age at first drug injection (year)		
< 25	1.7 (0.4-3.1)	0.300
25-29	1.5 (0.7-2.2)	
30+	1	
Number of injection per day		
≤ 2	1	0.200
> 2	2.3 (0.9-4.1)	
Sharing group size		0.020
≤ 2	1	
> 2	3.5 (1.2-5.5)	
Sex partner		
≤ 2	1	0.030
> 2	2.8 (1.2-4.3)	
Visit of needle and syringe program		0.010
Regular	0.5 (0.01-0.70)	
Irregular	1	

*AOR were adjusted for all covariates with P < 0.200 in bivariate analysis which included marital status, age at first drug use, number injection per day, Current self-reported HCV status, sharing group size, occupation, size of sex partner and visit of NSP.
NSP: Needle and syringe program; AOR: Adjusted odds ratio; HCV: Hepatitis C virus; DHR: Dual HIV risk

Marital status (AOR: 3.0; 95% CI: 1.0-4.0), unknown HCV status (AOR: 3.5; 95% CI: 1.5-6.2), being homeless (AOR: 2.5; 95% CI: 1.4-5.4) regular visit to NSP (AOR: 0.5; 95% CI: 0.04-0.70), more than 2 sex partners (AOR: 2.8; 95% CI: 1.4-5.3), and injection drug partners (AOR: 3.5; 95% CI: 1.2-5.5) were kept in the multivariate logistic model (Table 2). The odds of DHR among PWID who were single were 3 times higher than married PWID. DHR was higher (AOR: 2.3) among people had more than 2 injection per day but was not statistically significant (P > 0.050). Multivariate model showed that regular visit to NSP reduced odd of HDR to 50% when adjusted for other covariates, but still remained statistically significant (P < 0.050). The odds of reporting DHR was significantly higher in those ≥ 2 sex partners and injection partner (P < 0.010). Odds of DHR was higher (AOR: 2.3) among participants who had more than 2 injection per day but was not statistically significant (P > 0.050). The AOR for other variables like age at first drug injection (AOR: 1.7) and current most frequent drug

(AOR: 1.8) was not significant.

Discussion

Consistent with previous findings in national settings our findings indicate that DHR was common in PWID in Iran (38%). Khajehkazemi et al.[1] and Alipour et al.[6] reported high rates of injection and sexual risk behaviors among PWID. They showed that percentage of PWID who did not use condom in their last sexual practice and had RSS during the month before the interview were 60% and 40%, respectively. Moreover, the results of our study indicating that having larger injecting and sexual networks were associated with dual risk in PWID. Association between larger sexual and injecting networks and HIV risk has been previously showed in many researches.[18,19] The effect of having larger sexual and injecting networks on dual risk can be explained by having more opportunities to involve in such risk or feeling peer pressure from their network members to involve in dual risk.[20] We found that PWID who were homeless and unemployed were more likely to involve in DHR. This relationship is likely due to negative effect of homelessness on unsafe sexual behavior through an economic-compulsive model in which homeless PWID exchange sex with food or housing. This finding is in line with other studies.[26,27]

The previous studies showed that employment and housing status could predict level of self-esteem and health-care utilization among PWID. We also found that they might predict lower levels of NSP service utilization.[20] We also observed that regular visit of NSPs can reduced the DHR among PWID by decrease in syringe sharing. This is similar to the findings from other studies that clearly showed positive effects of access to NSPs on high-risk behaviors.[4,12,14,15,24] We also found that those who do not know their HCV status were more likely to report DHR. Our findings are consistent with a research from France, which found that not knowing HCV status showed an association with RSS.[28] We found in multiple regressions that there is no association between injection frequency and DHR. However, some studies suggest against our study.[12,28,29] High prevalence of DHR among PWID is a warning sign for the drug and health policymakers in Iran to design and implement more aggressive harm reduction interventions for PWID and their sexual partners. We emphasis the importance of developing multiple levels interventions that address DHR among PWID. These interventions should focus on homelessness and PWID with larger injecting or sexual. Interventions can be including the individual, social, and structural. Individual-level interventions need to strengthen PWID for avoiding unprotected sex and RSS within their social networks. Structural interventions, include increasing availability and accessibility of harm reduction services in locations with high concentrations of homeless PWID.[20,30] To prevent DHR a combination of intervention strategies is likely necessary, including well-established interventions (such as NSP, OMTs and HIV counseling and testing).[14,20,31,32]

Limitations of our study need to be noticed. The first major limitation of this study is its cross-sectional design. This does not enable us to directly investigate the causal relationship between social network and its direct impact on drug use and sexual behaviors, although it showed a strong association analysis between these variables after adjusting for other covariates. More longitudinal studies are needed to show causal inferences. Furthermore, our data might be biased through recall and social desirability bias because of its self-report nature.[33] The sample is not a random sample and was recruited using snowball sampling, which may have biased the sample because of the size of participants' social networks and homophile in recruitment patterns. Caution is thereby necessary in generalizing the results to all PWIDs living in Iran.

Conclusion

DHR was common in PWID in Kermanshah. Having multiple injecting and sexual partners increased the odds of engaging in dual risk behaviors but regular visit of NSPs can reduced the DHR among PWID. Hence, we have suggested the importance of developing comprehensive package of harm reduction services to reduce the DHR among PWID.

Conflict of Interests

AN and AH participated in the planning and implementation of harm reduction programs in Ministry of Health. All other authors had no

conflicts of interest to be declared.

Acknowledgements

We gratefully thank all staff in the drop-in center in Kermanshah who contributed in recruiting (Ms. Barkhordar) and data collection/ interview (Mr. Azad and Mr. Amini). We profoundly thank people who were generous for their time and participated in the study. We also want to appreciate Mostafa Shokohi and other experts from Regional Knowledge Hub for HIV Surveillance who provided valuable inputs to the study protocol and the questionnaire.

References

1. Khajehkazemi R, Osooli M, Sajadi L, Karamouzian M, Sedaghat A, Fahimfar N, et al. HIV prevalence and risk behaviours among people who inject drugs in Iran: the 2010 National Surveillance Survey. Sex Transm Infect 2013; 89(Suppl 3): iii29-iii32.
2. Nasirian M, Doroudi F, Gooya MM, Sedaghat A, Haghdoost AA. Modeling of human immunodeficiency virus modes of transmission in Iran. J Res Health Sci 2012; 12(2): 81-7.
3. Mirahmadizadeh AR, Majdzadeh R, Mohammad K, Forouzanfar H. Prevalence of HIV and hepatitis C virus infections and related behavioral determinants among injecting drug users of drop-in centers in Iran. Iran Red Crescent Med J 2009; 11(3): 325-9.
4. Vazirian M, Nassirimanesh B, Zamani S, Ono-Kihara M, Kihara M, Ravari SM, et al. Needle and syringe sharing practices of injecting drug users participating in an outreach HIV prevention program in Tehran, Iran: a cross-sectional study. Harm Reduct J 2005; 2: 19.
5. Najafi M, Farhoudian A, Alivandi-Vafa M, Ekhtiari H, Massah O. Comparing emotion regulation in methamphetamine abuser with and without risky behavior. J Rehab 2014; 14(S1): 9-14. [In Persian].
6. Alipour A, Haghdoost AA, Sajadi L, Zolala F. HIV prevalence and related risk behaviours among female partners of male injecting drugs users in Iran: results of a bio-behavioural survey, 2010. Sex Transm Infect 2013; 89(Suppl 3): iii41-iii44.
7. Noroozi M, Mirzazadeh A, Noroozi A, Mehrabi Y, Hajebi A, Zamani S, et al. Client-level coverage of needle and syringe program and high-risk injection behaviors: a case study of people who inject drugs in Kermanshah, Iran. Addict Health 2015; 7(3-4): 164-73.
8. Eshrati B, Asl RT, Dell CA, Afshar P, Millson PM, Kamali M, et al. Preventing HIV transmission among Iranian prisoners: initial support for providing education on the benefits of harm reduction practices. Harm Reduct J 2008; 5: 21.
9. Supreme Council of Nationwide Planning of HIV/AIDS Infection Prevention and Control. Monitoring the Declaration of Commitment Adopted by the United Nations General Assembly Special Session on HIV/AIDS [Online]. [cited 2008 Jan]; Available from: URL: http://www.arums.ac.ir/file/download/page/1473488467-iran-ungass-report-2008-ver14-persian-9179.pdf
10. Rahimi-Movaghar A, Amin-Esmaeili M, Haghdoost AA, Sadeghirad B, Mohraz M. HIV prevalence amongst injecting drug users in Iran: a systematic review of studies conducted during the decade 1998-2007. Int J Drug Policy 2012; 23(4): 271-8.
11. Noroozi M, Nedjat S, Golestan B, Majdzadeh R. What are differences between non-injecting and injecting drug addicts? Int J Prev Med 2012; 3(6): 414-9.
12. Bruneau J, Lamothe F, Franco E, Lachance N, Desy M, Soto J, et al. High rates of HIV infection among injection drug users participating in needle exchange programs in Montreal: results of a cohort study. Am J Epidemiol 1997; 146(12): 994-1002.
13. De P, Cox J, Boivin JF, Platt RW, Jolly AM. Social network-related risk factors for bloodborne virus infections among injection drug users receiving syringes through secondary exchange. J Urban Health 2008; 85(1): 77-89.
14. Bastos FI, Strathdee SA. Evaluating effectiveness of syringe exchange programmes: current issues and future prospects. Soc Sci Med 2000; 51(12): 1771-82.
15. Bluthenthal RN, Kral AH, Erringer EA, Edlin BR. Use of an illegal syringe exchange and injection-related risk behaviors among street-recruited injection drug users in Oakland, California, 1992 to 1995. J Acquir Immune Defic Syndr Hum Retrovirol 1998; 18(5): 505-11.
16. Cao W, Treloar C. Comparison of needle and syringe programme attendees and non-attendees from a high drug-using area in Sydney, New South Wales. Drug Alcohol Rev 2006; 25(5): 439-44.
17. Klee H, Morris J. The role of needle exchanges in modifying sharing behaviour: cross-study comparisons 1989-1993. Addiction 1995; 90(12): 1635-45.
18. Latkin CA, Kuramoto SJ, Davey-Rothwell MA, Tobin KE. Social norms, social networks, and HIV risk behavior among injection drug users. AIDS Behav 2010; 14(5): 1159-68.

19. Neaigus A, Friedman SR, Jose B, Goldstein MF, Curtis R, Ildefonso G, et al. High-risk personal networks and syringe sharing as risk factors for HIV infection among new drug injectors. J Acquir Immune Defic Syndr Hum Retrovirol 1996; 11(5): 499-509.

20. Neaigus A, Reilly KH, Jenness SM, Hagan H, Wendel T, Gelpi-Acosta C. Dual HIV risk: receptive syringe sharing and unprotected sex among HIV-negative injection drug users in New York City. AIDS Behav 2013; 17(7): 2501-9.

21. Nazari SS, Noroozi M, Soori H, Noroozi A, Mehrabi Y, Hajebi A, et al. The effect of on-site and outreach-based needle and syringe programs in people who inject drugs in Kermanshah, Iran. Int J Drug Policy 2016; 27: 127-31.

22. Noori R, Rafiey H, Azizabadi-Farahani M, Khoddami-Vishteh HR, Mirabi P, Farhadi MH, et al. Risk factors of suicidal ideation and attempt in women with drug user spouses. J Chin Med Assoc 2013; 76(11): 648-52.

23. McCoy CB, Lai S, Metsch LR, Messiah SE, Zhao W. Injection drug use and crack cocaine smoking: independent and dual risk behaviors for HIV infection. Ann Epidemiol 2004; 14(8): 535-42.

24. Iversen J, Topp L, Wand H, Maher L. Individual-level syringe coverage among Needle and Syringe Program attendees in Australia. Drug Alcohol Depend 2012; 122(3): 195-200.

25. Lowndes CM, Alary M, Platt L. Injection drug use, commercial sex work, and the HIV/STI epidemic in the Russian Federation. Sex Transm Dis 2003; 30(1): 46-8.

26. Hadland SE, Marshall BD, Kerr T, Qi J, Montaner JS, Wood E. Suicide and history of childhood trauma among street youth. J Affect Disord 2012; 136(3): 377-80.

27. Marshall BD, Wood E, Shoveller JA, Buxton JA, Montaner JS, Kerr T. Individual, social, and environmental factors associated with initiating methamphetamine injection: implications for drug use and HIV prevention strategies. Prev Sci 2011; 12(2): 173-80.

28. Vidal-Trecan G, Coste J, Varescon-Pousson I, Christoforov B, Boissonnas A. HCV status knowledge and risk behaviours amongst intravenous drug users. Eur J Epidemiol 2000; 16(5): 439-45.

29. Coates TJ, Richter L, Caceres C. Behavioural strategies to reduce HIV transmission: how to make them work better. Lancet 2008; 372(9639): 669-84.

30. El-Bassel N, Wechsberg WM, Shaw SA. Dual HIV risk and vulnerabilities among women who use or inject drugs: no single prevention strategy is the answer. Curr Opin HIV AIDS 2012; 7(4): 326-31.

31. Bryant J, Treloar C. Risk practices and other characteristics of injecting drug users who obtain injecting equipment from pharmacies and personal networks. Int J Drug Policy 2006; 17(5): 418-24.

32. Strathdee SA, Shoptaw S, Dyer TP, Quan VM, Aramrattana A. Towards combination HIV prevention for injection drug users: addressing addictophobia, apathy and inattention. Curr Opin HIV AIDS 2012; 7(4): 320-5.

33. Latkin CA, Vlahov D. Socially desirable response tendency as a correlate of accuracy of self-reported HIV serostatus for HIV seropositive injection drug users. Addiction 1998; 93(8): 1191-7.

اندازه شبکه اجتماعی و عوامل اقتصادی– اجتماعی مرتبط با رفتارهای پرخطر تزریقی و جنسی: یک مطالعه مقطعی در مصرف کنندگان تزریقی در کرمانشاه

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مقاله پژوهشی

چکیده

مقدمه: مطالعات اندکی به بررسی نقش عوامل اجتماعی از جمله اندازه شبکه اجتماعی و ارتباط آن با رفتارهای پرخطر تزریقی و جنسی پرداخته‌اند. شناخت این عوامل می‌تواند در طراحی و اجرای راهبردهای مناسب برای این افراد مفید باشد. مطالعه حاضر با هدف بررسی عوامل اجتماعی مؤثر بر رفتارهای پرخطر تزریقی و جنسی HIV (Human immunodeficiency virus) در مصرف کنندگان تزریقی طراحی گردید.

روش‌ها: این مطالعه به صورت مقطعی بر روی ۴۵۵ مصرف کننده تزریقی مواد که از طریق نمونه‌گیری گلوله برفی انتخاب شدند، انجام گرفت. اطلاعات در مورد وضعیت اقتصادی- اجتماعی و رفتارهای پرخطر تزریقی و جنسی، از طریق پرسش‌نامه استاندارد جمع‌آوری گردید. متغیر پیامد شامل داشتن سابقه رفتار جنسی پرخطر و گرفتن سرنگ مصرفی دیگران (رفتارهای پرخطر توأم HIV) بود. داده‌ها با استفاده از آزمون‌های تک متغیره و چند متغیره رگرسیون لجستیک مورد تجزیه و تحلیل قرار گرفت. در نهایت، نسبت شانس تطبیق یافته و حدود اطمینان گزارش شد.

یافته‌ها: میانگین سنی نمونه‌ها، ۷/۳ ± ۳۳/۲ سال بود. شیوع رفتارهای پرخطر توأم HIV در دوازده ماه گذشته، ۳۸ درصد گزارش شد (با حدود اطمینان ۹۵ درصد، ۵۱-۱۸). نتایج آزمون رگرسیون چند متغیره نشان داد که شرکت منظم در برنامه توزیع سرنگ و سوزن، باعث کاهش ۵۰ درصدی رفتارهای پرخطر توأم گردید و داشتن شرکای تزریقی و جنسی بیشتر از دو نفر، شانس ارتکاب به رفتارهای پرخطر را تا ۳-۲ برابر افزایش داد.

نتیجه‌گیری: نتایج مطالعه نشان می‌دهد که رفتارهای پرخطر تزریقی و جنسی در مصرف کنندگان تزریقی تا حدودی شایع است. داشتن شرکای جنسی و تزریقی متعدد، احتمال رفتارهای پرخطر را افزایش می‌دهد، اما شرکت منظم در برنامه، باعث کاهش رفتارهای پرخطر توأم HIV می‌گردد.

واژگان کلیدی: مصرف کنندگان تزریقی، رفتارهای پرخطر جنسی و تزریقی، شبکه اجتماعی

ارجاع: نوروزی مهدی، میرزازاده علی، نوروزی علیرضا، شریفی حمید، هیگز پیتر، جرجران شوشتری زهرا، فرهودیان علی، فدایی فربد، محمدی شاهبلاغی فرحناز، آرمون بهرام، حاجبی احمد، مساح امید. **اندازه شبکه اجتماعی و عوامل اقتصادی- اجتماعی مرتبط با رفتارهای پرخطر تزریقی و جنسی: یک مطالعه مقطعی در مصرف کنندگان تزریقی در کرمانشاه.** مجله اعتیاد و سلامت ۱۳۹۵؛ ۸ (۳): ۱۹۴-۱۸۶.

تاریخ دریافت: ۹۴/۱۱/۸ **تاریخ پذیرش:** ۹۵/۱/۲۰

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