Prevalence of HIV, Syphilis, Hepatitis-B, and Hepatitis-C among People with Injecting Drugs in Western Terai Highway districts, Nepal

***Tarun Paudel[1], Bir Rawal[2], Keshab Deuba[2], Sampurna Kakchapati[2], Kapil Amgain[3], Pratima Neupane[4], Seshananda Sanjel[5]**

[1] Professor, Dept of General Practice & EM, KAHS, Ex-Director, Ministry of Health and Population, National Centre for AIDS and STD Control (NCASC)

[2] National Centre of AIDS and STD Control, Teku, Kathmandu, Nepal

[3] Assistant Professor and Head, Department of Anatomy & Cell Biology,KAHS, Jumla, Nepal

[4] Lecturer, Department of Community Medicine & Public Health, School of Public Health, KAHS, Jumla

[5]Associate Professor, Department of Community Medicine & Public Health, School of Public Health, KAHS

ABSTRACT

Introduction: HIV epidemic has become the major problems among people with injecting drugs (PWIDs) in Nepal. The study was carried out to assess the prevalence of sexually transmitted diseases including HIV/AIDS among PWIDs.

Methods: This descriptive cross-sectional survey was conducted in male PWIDs of age more than 16 years residing in Western to Far West Terai Districts of Nepal who had been injecting drugs for three months prior to the date of the survey" March-April 2017. Demographic data were collected by using a structured questionnaire and the data obtained were analysis by using SPSS version 21.

Results: Prevalence of HIV, HBV, HCV, and STI among PWIDs were 5.3%, 2.7%, 23.7%, and 2.0% respectively. Majority of the PWIDs were literate (93.7%) and their age was below 35 years. Similarly, 53.7% of them were living with their female sexual partner, and 95.0% were living with their wife. Ninety-six per cent of the respondents reported to be ever involved in sexual activity, 77.1% of them initiated the sexual intercourse before the age of 20 years and 41.9% of them had more than one female sexual partner. The survey indicated that 36.3% had been injecting drugs for more than 5 years while 27.7% had been injecting for last 2-5 years and 55.0% of the respondents had injected for the first time at the age of 16-24 years.

Conclusion: There is a high prevalence of HIV, HCV, HBV and active syphilis among the PWIDs. Co-infection of HIV and HCV, as well as Hepatitis B and C, were also prevalent among PWIDs.

Keywords: Prevalence, people with injecting drugs, HIV/AIDS, Nepal

***Corresponding Author:**

Prof. Dr. Tarun Paudel

Email: drtarunpaudel@gmail.com

Access this article online

Quick Response Code

View PDF

Website: www.jkahs.org.np

DOI: http://doi.org/10.3126/jkahs.v2i2.25168

Article Info.

How to cite this article?

Paudel T, Rawal B, Deuba K, Kakchapati S, Amgain K, Sanjel S. Prevalence of HIV, Syphilis, Hepatitis-B, and Hepatitis-C among People with Injecting Drugs in Western Terai Highway districts, Nepal. Journal of Karnali Academy of Health Sciences. 2019;2(2): 98-106

Received: 28 April, Accepted: 18 June, Published: 30 August 2019

Conflict of Interest: None, Source of Support: GON

INTRODUCTION

In Nepal, the spread of Human Immunodeficiency Virus (HIV) is concentrated among Key Affected Populations (KAPs) comprising of people who inject drugs (PWIDs), men who have sex with men (MSM), labor migrants, spouses, and Female Sex Workers (FSWs).[1,2] The transmission of HIV is largely determined by KAPs and consequential health risk behaviors.[1,3] In Nepal, the National Center for AIDS and STD Control (NCASC) aims to track patterns of HIV incidence and prevalence, stir elated awareness, and risk behaviors among high-risk populations. The estimated global prevalence of HCV was 60–80% of IDUs, HBV prevalence of 5–10%.[4] HIV infection shows a steady decreasing trend, but the number of cases remains high in Nepal.[5]

Integrated Biological and Behavioral Surveillance (IBBS) surveys have been successfully conducted in various rounds in Nepal for the last decade among key populations at NCASC with support from USAID, Global Fund and Pooled Fund. Evidences from different rounds of IBBS surveys carried out in Nepal suggest that HIV prevalence is still high among PWID compared to other Key population such as Female Sex workers (FSW) and Male having sex with Male (MSM).[6] This is six round of IBBS surveys among PWID in west to far west Terai Highway Districts.

IBBS surveys are meant to generate evidence on the prevalence and risk behaviors for HIV amongst high-risk-groups across Nepal. The goal of IBBS is to guide HIV prevention planning and resource allocation and to inform the development of effective HIV prevention interventions for key populations.[7] The survey was conducted to monitor trends in HIV and STI prevalence and to explore behavioral information from high-risk groups. The objective of the survey is to determine the prevalence of HIV, syphilis, Hepatitis B and Hepatitis C among PWIDs in Western to Far-western Terai Highway districts, Nepal.

METHODS

Integrated Biological and Behavioral Surveillance (IBBS) survey was descriptive cross-sectional in design, conducted during the March-April 2017 among male PWIDS with more than 16 years of age who had been injecting drugs for at least three months prior to the date of the survey. This survey was conducted in Western to Far West Terai Districts namely Rupandehi, Kapilvastu, Dang, Banke, Bardiya, Kailali and Kanchanpur of Nepal. Two stage cluster sampling method was used to select the PWIDs. All together 132 clusters were selected from Survey highway districts, 30 clusters were selected from the sampling to ensure proper representation of the survey population. The same size of sample used for previous rounds of IBBS surveys was used to select 300 PWIDs.

Biological data were collected applying principles of handling biological data for external quality assurance. A standardized format of the questionnaire is used for each group, which is repeated with relevant modification in the following rounds of the survey to explore behavioral changes over time.[6] The survey used a structured questionnaire to assess background characteristics and injecting behaviors. The questionnaire was developed with reference to the existing questionnaire used in the previous round. All data collection tools were developed in Nepali and the interviews were conducted in Nepali language by female enumerators. The field team was provided with 6 days of training. The training including mock interview exercises was facilitated by the relevant experts.

Before the interview, PWIDs were informally asked a few questions in order to ensure that they met the eligibility criteria set for the study. Injecting marks were also observed in order to screen for injecting behavior (i.e. skin lesions, abscess, or punctured wounds). PWIDs were checked for any clinical symptoms of STIs by a certified health assistant who also filled out a checklist of health information provided by each participant. The progress of the fieldwork was monitored throughout the survey period. The electronic data was extracted into MS Excel for verification and transferred into Statistical Package for the Social Sciences (SPSS) version 21 and descriptive analysis was done. Approval for the

study was obtained from the Nepal Health Research Council. Confidentiality was maintained throughout the study. Interviewers had taken interviews in a private room after verbal informed consent was obtained.

RESULTS

The study revealed that among 300 PWID, 71 (23.7%) were found to be HCV reactive, 16 (5.3%) were HIV positive, and 8 (2.7%) of the respondents were found to be HBsAg reactive in Western and Far western Terai districts of Nepal (Table 1).

Table 1: Biological Components

Categories of PWIDs	Mid-Western to Far Western	
	Frequency (N=300)	Percentage (%)
HIV – Positive	16	5.3
HCV – Reactive	71	23.7
HBsAg – Reactive	8	2.7
Active Syphilis	6	2.0
History Syphilis	4	1.3
Co-infection of HIV and HCV	11	3.7
Co-infection of HIV and HBsAg	0	0.0
Co-infection of HCV and HBsAg	2	0.7
Co-infection of HIV, HCV and HBsAg	0	0.0

The mean age of the respondents was 29.92 + 8.85 years. Out of 300 PWIDs, about half of the respondents (50.7%) were never married and 47.7% were married and remaining of them was divorced.

The mean age of first marriage was 21.80 + 4.20 years, with most marriages happening within 20-24 years of age (42.6%). Regarding educational level, 46.7% had secondary level and 27.0% attended SLC and above and 6.3% were illiterate. Similarly, slighly above half (53.0%) belonged to upper caste/ethnic groups and remaining belonged to disadvantaged (Janajati, Dalit, and non-Dalit Terai caste). Just above one in ten (10.3%) of the PWIDs had migrants (Table 2).

Table 2: Demographic Characteristics

Demographic characteristics of the respondents (PWIDs)	Mid-Western to Far Western	
	Frequency (f)	Percentage (%)
16-19 Years	31	10.3
20-24 Years	77	25.7
25-29 Years	53	17.7
30-34 Years	47	15.7
35 Years and above	92	30.7
Mean ± Std. Dev.	**29.92 ± (8.85)**	
Median (Range)	**28 (17 – 53)**	

Demographic characteristics of the respondents (PWIDs)	Mid-Western to Far Western	
	Frequency (f)	Percentage (%)
Marital Status		
Never married	152	50.7
Married	143	47.7
Divorce/Separated	5	1.7
Education		
Illiterate	19	6.3
Primary	55	18.3
Secondary	140	46.7
SLC and above	72	24.0
Literate, no schooling	14	4.7
Ethnicity		
Dalit	30	10.0
Disadvantaged Janajatis	49	16.3
Disadvantage non-Dalit Terai caste groups	26	8.7
Religious Minorities	21	7.0
Relatively advantaged Janajatis	15	5.0
Upper caste groups	159	53.0
Duration of stay in this currently living district		
Since birth	251	83.7
<= 5 years	31	10.3
More than 5 years	18	6.0
PWIDs living with		
Living with wife	139	46.3
Living with female sexual partner	161	53.7
Family/Relatives	0	0.0
No response	0	0.0
Age at first Marriage	**N=148**	
<=19 Years	48	32.4
20-24 Years	63	42.6
25 Years and above	37	25.0
Mean ± Std. Dev.	**21.80 ± (4.20)**	
Median (Range)	**21 (12 – 35)**	
Married PWID Living With	**N=143**	**%**
Wife	136	95.1
With Other Sexual Partner	7	4.9
Without Sexual Partner/Alone	0	0.0

It was found that (288, 96.0%) of the PWIDs had had sexual intercourse in their lifetime. More than three-fourths of the PWIDs (222, 77.1%) disclosed having their first sexual intercourse by the age of 20 years. The majority of respondents (265, 91.4%) had sexual intercourse over the past 12 months. More than half of the PWIDs (154, 58.1%) were found to have had sexual intercourse with a single partner, followed by PWIDs who had 2-3 partners (88, 33.2%) (Table 3).

Table 3: Sexual History among PWIDs

Sexual History among PWIDs	Mid-Western to Far Western	
	Frequency (N=300)	Percentage (%)
Ever had sexual intercourse		
Yes	288	96.0
No	10	3.3
Don't remember	2	0.7
Total	**300**	**100.0**
Age at first sexual intercourse		
Below 20 Years	222	77.1
20 Years and above	66	22.9
Total	**288**	**100.0**
Sexual intercourse in the past 12 months		
Yes	265	91.4
No	25	8.6
Total	**290**	**100.0**
Female sexual partners in the past 12 months		
1 partner	154	58.1
2–3 partners	88	33.2
4–6 partners	19	7.2
Seven and more partners	4	1.5
Total	**265**	**100.0**

The mean duration of injecting drugs by PWIDs was 69.23 + 69.17 months. More than one third of PWIDs (36.3%) were injecting drugs more than 61 months (five years). Similarly, 27.7% and 25.7% of the PWIDs were using drugs for 25-60 months and 12-24 months respectively. The mean age at first injection of drugs was 24.60 + 6.58 years (Table 4).

Table 4: Drug Injecting History among PWIDs

Injecting History among PWIDs	Mid-Western to Far Western	
	Frequency (N=300)	Percentage (%)
Duration of drug injection		
Up to 11 months	31	10.3
12-24 months	77	25.7
25-60 months	83	27.7
61 + months	109	36.3
Mean ± Std. Dev.	**69.23 ± (69.17)**	
Median (Range)	**48 (4 – 360)**	
Age at first injected		
Below 16 Years	10	3.3
16 - 24 Years	165	55.0
25 Years and above	125	41.7
Mean ± Std. Dev.	**24.26 ± (6.58)**	
Median (Range)	**23 (10 – 45)**	

Out of 300 PWIDs, 276 (92%) had inject the drug recently in last month. However, most interestingly, we found that 243 (88%) of the PWIDs use sterile syringe while remaining used non-sterile syringe. Similarly, about 56% of PWIDs inject drugs once in a day whereas 36.0% inject drugs twice in a day. Nearly two third of the PWIDs identified their most recent use of needle/syringe as high risk behavior and 87.7% of them reported being alone during their last injection (Table 5).

Table 5: Injecting behaviour in the past month and last injection

Injecting behavior among PWIDs	Mid-Western to Far Western	
	Frequency (N=300)	Percentage (%)
Inject drug in the last month		
Yes	276	92.0
No	24	8.0
Total	**300**	**100.0**
Use of non-sterile syringe in the last month		
Yes	33	12.0
No	243	88.0
Total	**276**	**100.0**
Frequency of drug injection in the last day		
Once	170	56.7
Twice	108	36.0
3 or more times	22	7.3
Total	**300**	**100.0**

Injecting behavior among PWIDs	Mid-Western to Far Western	
	Frequency (N=300)	Percentage (%)
Needle/syringe used; Most recent		
High risk behavior	204	68.0
Low risk behavior	96	32.0
Total	**300**	**100.0**
Number of person during last injection		
Alone	263	87.7
1-2 Persons	22	7.3
3-5 Persons	15	5.0
Total	**300**	**100.0**

DISCUSSION

The study revealed an HIV prevalence of 5.3% among the PWIDs in the study area of Nepal. Moreover, nearly a quarter of the respondents (23.7%) were found to be reactive to HCV. Another 2.7% of the respondents were found to be HBsAg reactive. Likewise, the prevalence of active syphilis among the sampled population was calculated as two percent, with a further 1.3% having previous history of syphilis. Furthermore, co-infection of HIV and HCV as well as HCV and HBsAg was detected in 3.7% and 0.7% of the respondents respectively. In 2017, it was increased to 5.3%, likewise, the prevalence of active syphilis has increased from previous round of IBBS survey (0.3% in 2015 to 2.0% in 2017) where the HIV prevalence among PWIDs in the Kathmandu Valley in 2015 was found to be 6.4%, HCV prevalence was 22.0%.[1] HCV prevalence among PWID had increased significantly from 8.0% in 2015 to 23.7% in 2017 and HBV prevalence also increases to 2.7% in 2017 from 1.7% in 2015. Injecting drug use accounts for approximately 10% of HIV infections globally and the estimated global prevalence of hepatitis C in people who inject drugs is 67%.[8] In another study, the prevalence of HIV among FIDUs in 2017 was 1.9% syphilis was 3.9%, Hepatitis B and Hepatitis C were 2.6% and 1.3% respectively. About two out of three female injecting drug users were identified with HIV during the survey and remaining were previously diagnosed.[7]

It was found that 96.0% of the PWIDs have had sexual intercourse in their lifetime. More than three-fourths of the PWIDs disclosed having their first sexual intercourse by the age of 20 years. The study also found that majority of respondents had sexual intercourse over the past 12 months. However, the number of female sexual partners over the course of 12 months revealed great differences with the number ranging from one partner to seven or more. More than half of the PWIDs (58.1%) were found to have had sexual intercourse with a single partner, followed by PWIDs who had 2-3 partners (33.2%). Various study reported that the majority had sex with males, which was predominantly anal, had an average number of 74 sex partners (last three months), 92.0% had used lubricant during their last sex act, 38.0% perceived themselves as at risk of HIV and the majority knew of a place for confidential HIV testing place. Findings from studies suggest that several reasons account for lack of condom use among high-risk MSM.[9, 10]

In the previous study, just over 3 in 10 had been injecting drugs for over 5 years while one third had been found to be injecting for past 2-5 years and 8.7 percent of the respondents had started injecting drugs within a year. Regarding the frequency of injections, in the week prior to the interview, 16 percent of the respondents reported that they had injected on an average of 4-6 times a week, while 27.2 percent were found to have injected at least 2-3 times a week. Further, 10.7 percent claimed to be injected daily.

Likewise, the majority of the respondents (73.6%) reported injecting only once a day, while asked about the frequency of drug injection in the last day. In addition, 4.1 percent said that they injected three or more times on the day before interview.[1] In other study, authors found that more than three fourth of the respondents were injecting drug users nearly half of them had shared needles or syringes in the past month, most of them were involved in commercial or casual sex respectively.[11]

In this survey, the mean duration (in months) of injecting drugs by PWIDs was calculated to be 69.23 + 69.17 months with greater than 60 months (36.3%), 25-60 months (27.7%) and 12-24 months (25.7%) being the most prevalent time durations. Similarly, the mean age at first injection of drugs was calculated to be 24.60 + 6.58 years; the highly represented age-groups being 16-24 years and greater than 24 years at 55.0% and 41.7% respectively. This finding outlines the age groups and user-groups that need to be specifically targeted to reduce the burden of HIV/AIDS and STI due to PWIDs. In the previous study, the prevalence of HIV infection was highest for the following factors aged ≥30 years (32%), illiterate (28.5%), and injecting drugs >10 years (35%).[5]

The risk of HIV/AIDS and STI varies according to the drug injecting practice being adopted by the PWIDs. In this survey, majority (92.0%) of the PWIDs responded positively regarding injecting drug in the past one month. Previous study confirmed that the transmission of STI varies with HIV epidemic phase.[12]

In this study, majority (95.1%) of the PWIDs highlighted sharing needle with their friend in the last one week. There is evidence that reduction of the sharing of needles/ syringes had tremendous contribution in the harm reduction in HIV transmission. The sharing of a cooker/vial/container, cotton/filter or rise water was also found to be absent from majority (92.0%) of the PWIDs.[13] Consequently, the harm reduction strategies have to be applied to reduce the HIV/AIDS and STIs transmission.

LIMITATIONS

As this survey was conducted in PWIDs of 7 Districts of Nepal, this may not be generalized in context of general population of Nepal. As we provided the minimum cost of transportation to the PWIDs, there may be some possibilities that same PWIDSs can participate in multiple rounds of survey because a survey conducted in the same area among the same group over the time.

IMPLICATION

The findings of survey are valuable for monitoring HIV prevention, care and treatment programs and estimating and projecting HIV infections. The information can be used by donors, policymakers, program designers, implementers, academicians and civil society organizations in order to track the level of HIV epidemic among PWIDs and their related risk behaviors.

CONCLUSSION

There is high prevalence of HIV, HCV, HBV and active syphilis among the PWIDs. Co-infection of HIV and HCV as well as HCV and Hepatitis B were also prevalent. Peer and outreach education, partnerships with HTC/STI clinics, and inclusion of care and support are necessary for increasing exposure of the PWIDs to the programs and services related to HIV and AIDS. Comprehensive education and awareness program is required to reduce the prevalence.

ACKNOWLEDGEMENTS

We would like to thank all the stakeholders who supported for the accomplishment of the study. We acknowledge the support provided by Nepal Police, and District Public Health Office (DPHO) of the study districts. We like to offer our gratitude to all PWIDs who participated and provide valuable information.

REFERENCES

1. NCASC. Integrated Biological and Behavioral Surveillance (IBBS) Survey among People Who Inject Drugs (PWID) in Kathmandu Valley, 2015. Teku, Kathmandu: National Center for AIDS and STD control; 2015.
2. Furber AS, Newell JN, Lubben MM. A systematic review of current knowledge of HIV epidemiology and of sexual behaviour in Nepal. Tropical Medicine & International Health. 2002;7(2):140-8.
3. Pan X, Zhu Y, Wang Q, Zheng H, Chen X, Su J, et al. Prevalence of HIV, syphilis, HCV and their high risk behaviors among migrant workers in eastern China. PLoS One. 2013;8(2):e57258.
4. Nelson PK, Mathers BM, Cowie B, Hagan H, Des Jarlais D, Horyniak D, et al. Global epidemiology of hepatitis B and hepatitis C in people who inject drugs: results of systematic reviews. The Lancet. 2011;378(9791):571-83.
5. Kakchapati S, Singh DR, Rawal BB, Lim A. Human immunodeficiency virus infection and related risk behavior in people who inject drugs in Nepal. Asian Biomedicine. 2017;10(6):609-17.
6. NCASC. Integrated Biological and Behavioural Surveliance (IBBS) Survey among Wives of Migrants in Four Districts of Far-Western Region, Round 3 Kathmandu, Nepal: Ministry of Health and Population, National Centre for AIDS and STD Control; 2018.
7. Paudel T, Rawal BB, Deuba K, Kakchapati S, Gyawali K, Sanjel S. Female injecting drug users in Nepal Pokhara valley 2017. J adv health med sci. 2018;4(1):15-25.
8. WHO. HIV/AIDs and Injecting Drug Use 2015: Available from: http://www.who.int/hiv/topics/idu/en/.
9. Musinguzi G, Bastiaens H, Matovu JK, Nuwaha F, Mujisha G, Kiguli J, et al. Barriers to condom use among high risk men who have sex with men in Uganda: a qualitative study. PloS one. 2015;10(7):e0132297.
10. Stahlman S, Johnston LG, Yah C, Ketende S, Maziya S, Trapence G, et al. Respondent-driven sampling as a recruitment method for men who have sex with men in southern sub-Saharan Africa: a cross-sectional analysis by wave. Sex Transm Infect. 2016;92(4):292-8.
11. Ghimire B, Suguimoto SP, Zamani S, Ono-Kihara M, Kihara M. Vulnerability to HIV infection among female drug users in Kathmandu Valley, Nepal: a cross-sectional study. BMC public health. 2013;13(1):1238.
12. Ward H, Rönn M. The contribution of STIs to the sexual transmission of HIV. Current Opinion in HIV and AIDS. 2010;5(4):305.
13. Aspinall EJ, Nambiar D, Goldberg DJ, Hickman M, Weir A, Van Velzen E, et al. Are needle and syringe programmes associated with a reduction in HIV transmission among people who inject drugs: a systematic review and meta-analysis. International journal of epidemiology. 2013;43(1):235-48.