

Extended Abstract

Sexual risk behaviour among young injecting drug users in high HIV prevalence states of India: Evidence from IBBA

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Abstract:

IDUs may transmit HIV not only by needle-sharing but also by unprotected sexual intercourse. IBBA round-1 and round 2 data has been used. The proportion of paid sex and condom use has been increased among Young IDUs in most of the districts from round 1 to 2. In Manipur and Nagaland migration is the important predictor to explain partner mixing behaviour among YIDUs, whereas in Maharashtra, Mobility is important predictor, and those who are migrants they are more likely to have sex with more than one female partner in past month. Condom use at last sex with any type of female partner, In Maharashtra married YIDUs are more likely to use condom with any type of female partner approximately 18 times and mobility is also shows the important predictor to explain condom use at last sex with any type of female partner. Interventions with IDUs should go beyond harm reduction.

Key words: *YIDUs, condom use behaviour*

Introduction

Young Injecting drug users (YIDUs) are vulnerable to HIV infection both because of the sharing of contaminated injection equipment and their practice of high risk sexual behaviors. IDUs may transmit HIV not only by needle-sharing but also by unprotected sexual intercourse. Likewise, they may expose themselves to HIV through high-risk sexual behaviour. Very rapid rises in HIV prevalence among IDU communities have been documented in many parts of Asia and the world ([Rhodes, 2002](#)). Around the world, 5 million young people age 15-24 years of age group are living with HIV ([UNFPA, 2011](#)). In India HIV prevalence among young population are 0.1 percent (0.1% to 0.2 %) ([World Bank Report 2010](#)). According to NACO report 2011 the prevalence of IDU in India is 9.2 percent. There has been considerable debate over the extent to which these epidemics might fuel the spread of HIV in other non-injecting populations through sexual contact between injectors and non injectors. Some assert that HIV among IDUs tends to remain largely separate from

sexually driven epidemics, because drug injectors have low levels of sexual activity (WHO, 2001). Most of the interventions in India that aim to reduce HIV infection among IDUs have largely focused on transmission of infection through unsafe injecting drug use (Hangzo C, 1997). However, there is also a need to understand and address sexual transmission of HIV infection among IDUs and their sexual partners. At the same time as a few studies from Indonesia and United States of America (USA) have demonstrated no association between injecting and sexual risk behaviours (Pisani E, 2003 & Latkin C, 1994), other international studies conducted in South Africa and USA have established this association (Hikovani I, 2011 & Strathdee SA, 2003).

Although some Indian studies have investigated the sexual risk behaviours of IDUs (Parry C, 2007 & Armstrong G, 2011), none have attempted to analyze the associations between injecting and sexual risk behaviours of IDUs in Northeast India, where injecting drugs remains an important route of HIV transmission. Understanding this association will assist program planners and managers to sharpen the focus of their HIV prevention interventions. Therefore, this paper examines the relationship between injecting and sexual risk behaviours of young IDUs in the Indian states of Manipur, Nagaland and Maharashtra.

Objectives

The aim of this study is to understand the risky sexual behaviour among young injecting drug users in three high HIV prevalence states of India namely Maharashtra, Manipur and Nagaland, there are the some specific objectives:

- To understand the Changes in sexual behaviour of young injecting drug users in three states of India between two rounds.
- To determine the factor associated with partner mixing and condom use at last sex among YIDUs I round -2.

Methods and Materials

In order to understand the risky sexual behaviour among injecting drug users, data from *Integrated Behavioural and Biological Assessment (IBBA)* round 1 and round 2 is used.

Integrated Behavioural and Biological Assessment (IBBA): A Sexually Transmitted a Blood borne Infection Prevalence Assessment in High Risk Populations in India. The first round of IBBA was conducted in year 2005-06 and second round was done in 2009-10 by the Indian Council of Medical Research, National AIDS Research Institute, in partnership with Family Health International. The IBBA is funded by the Bill and Melinda Gates Foundation (BMGF) and was conducted in Avahan project states of Andhra Pradesh, Maharashtra, Tamil Nadu, Karnataka, Manipur and Nagaland and along the selected stretch of National Highways.

IBBA populations

- Female Sex Workers Brothel Based (FSW-BB)
- Female Sex Workers Non-Brothel Based (FSW-NBB)
- Male Who Have Sex With Men (MSM)/Male Sex Workers (MSW)
- Male clients of Female Sex Workers
- Male Injecting Drug Users (IDU)

National Highway

- Truckers Drivers and helper (TD/H)
- Female Sex Workers Highway-Based (FSW-HB)

IBBA collected the data district wise on IDU in three high HIV prevalence states of India namely Maharashtra (Mumbai/Thane), Manipur (Bishnupur and Churachandpur) and Nagaland (Phek and Wokha). The Operational definitions used for IDU in the study are as follows:

Operational Definitions of IBBA Populations

Injecting Drug users (IDUs)

Male, those who are 18 years or above and has injected drugs for non-medical reasons at least once in the last six months. As the focus of this study on only 18-24 years of age group of injecting drug users. Only 18-24 years of age group of the injecting drug users were selected from the original data for all the districts of Manipur, Nagaland and Maharashtra.

Sampling Technique

For injecting drug users (IDUs) Respondent-Driven sampling method has been used to sample eligible respondents. The sample size for each district was approximately 400. A total of 2,075 IDUs in round one and 1,977 in round two were interviewed in the IBBA. Since the focus of this study on only 18-24 years of age group, hence sample size for IDUs in round 1 is 908 and in round 2 is 540.

In the original data set of injecting drug users there was no weight variable has been calculated. The weight variable has been calculated by using the RDSAT 7.1.38 software which automatically calculates the weight.

Statistical Techniques

To understand the risky sexual behaviour of young injecting drug users Bivariate and binary logistic regression techniques have been used. To see what are changes in risky sexual behaviour of YIDUs simple crosstab has been done. And binary logistic regression has been used to identify the factor associated with partner mixing and condom use with last sex.

Results and Discussion

Changes in sexual behaviour of young injecting drug users

In all the districts a large majority of IDUs were sexually active as 88 percent of the injecting drug users in Maharashtra and 73 percent and 91 percent Manipur and Nagaland reported to ever have had sex with a women. About 88 percent of the injecting drug user had sex with the female partner in last 12 month in round two in Maharashtra. In Bishnupur and Phek this proportion was 66 percent and 89 percent. Within the rounds there was an increase seen in this proportion for all the districts. In Maharashtra about 64 percent of the injecting drug users in round two had ever sex with paid partner as compared to 74 percent in round one. In Manipur and Nagaland also there was an increased sexual activity with paid partner.

Majority of injecting drug user reported multi partner behaviour in both the round one and two. Overall, paid sex ever was increasing in all the districts from round 1 to 2. Except in Wokha, all the other districts showed increase in paid sex in last 12 months. Sex with non-paid partner or regular partner/spouse is reducing in Manipur but increasing substantially in Nagaland and Maharashtra/Thane. Sexual encounters with regular partner showed an increasing trend in Manipur and in Phek whereas it showed a dip in Maharashtra.

In all the districts most of the young IDUs in round one and round two reported that their multipartner were not as a drug user in the last 12 month. In Phek and Wokha, 4 percent and 22 percent young IDUs reported drug user as sexual partner in round two as compared to 6 percent and 7 percent in round one respectively. In Mumbai/Thane, 19 percent of the young injecting drug users had at least one female sexual partner in the past one year in round two while in round one it was 24 percent. In Bishnupur and Churachandpur, 45 percent and 30 percent had single partner whereas in Phek and Wokha it was 17 percent and 23 percent had single partner in round two.

Condom use at last sex with different type of female partner is different in every district from round 1 to round 2. Approximately 73 percent of the young injecting drug users in round two, reported that they had used condom at last sex with paid partner in Mumbai/Thane whereas 27 percent and 83 percent, Bishnupur and Churachandpur in Manipur, 60 percent and 51 percent respectively in Phek and Wokha in Nagaland had used condom at last time of sex with paid partner. It was showing the increasing trend of condom used in round two as compared to round one in the entire district except Bishnupur district of Manipur.

Determinants of partner mixing and condom use during last sex among young injecting drug user

Table 3.1 and 3.2 represent the result of Binary logistic regression model for partner mixing and condom use last time in 12 month among young injecting drug users according to their background characteristics, contextual factors regarding injecting drug use. There have been used two type of model to describe the determinants of partner mixing and condom use last time. In last time with any type of partner among young injecting drug users in this logistic regression analysis. In Model 1 only background characteristics of injecting drug users have been included to explain the effect of these characteristics on partner mixing means that have the single or more than one partner and condom use behaviour last time with any type of female partner among young injecting drug users. In model two contextual factors regarding injecting drug use have been included like age at initiating injecting drugs, duration between first drug use and first injecting drug needle/syringe changing behaviour with different partner

In Manipur those who are migrants they are 5 times more likely to have more than one partner that is migration is important predictor to explain partner mixing behaviour among young injecting drug users. Those who started injecting drug below 15 years are more likely

to have sex with more than one partner in past 12 month. Among that young injecting drug user who started injecting within 2 to 5 years of drug use they are also 2 times more likely to have sex with more than one partner. And one important finding of Manipur state is that young injecting drug users are more likely to have sex in last 12 month those who used needle/syringe which was previously someone else has injected approximately 5 times. In Nagaland only migration and living status of young injecting drug users are showing significantly associated with partner mixing. Among young injecting drug use those who are living without partner are more probable to have sex with more than one partner. Migrant's young injecting drug users are 3 times more likely to have sexual intercourse with more than one partner. In Maharashtra the case is totally different, those young injecting living with they are 3 times more likely to have sex more than one partner Mobility is an important predictor to explain the partner mixing behaviour of young injecting drug users, approximately 3 times and 2 times more likely to have sex with more than one partner in last 12 month.

In Maharashtra, marital status is showing the important predictor to explain condom use last time with any type of female partner, married young Injecting drug users are more likely to use condom at last sex with any type of female partner approximately 18 times. In Nagaland, among those young injecting drug user who are Literate and working are 3 times and 2 times more likely to use condom at last sex. Those young injecting drug users who initiate injecting drug within 2 to 5 years of drug use they are 2 times more likely to use condom. Mobility is important predictor to explain condom use behaviour in Maharashtra, 1.5 time s more likely to use condom at last sex. Among young injecting drug user those are living with partner and sharing the needle/ syringe with another partner, 4 times and 3 times more likely to condom use at last sex with any type of partner.

Summary of finding and Conclusion

YIDUs may transmit HIV not only by needle-sharing but also by unprotected sexual intercourse. Likewise, they may expose themselves to HIV through high-risk sexual behaviour. Overall, paid sex ever was increasing in all the districts from round 1 to 2. Except in Wokha, all the other districts showed increase in paid sex in last 12 months. In Bishunpur and Churachandpur, 45 percent and 30 percent had Multi partner whereas in Phek and Wokha it was 17 percent and 23 percent had multipartner partner in round two. Approximately, 73

percent of the young injecting drug users in round two, reported that they had used condom in last sex with paid partner in Mumbai/Thane. Whereas, 27 percent and 83 percent, Bishnupur and Churachandpur in Manipur, 60 percent and 51 percent respectively in Phek and Wokha in Nagaland had used condom in last time of sex with paid partner.

Migrants in Manipur are 5 times more likely to have sex with more than one partner. YIDUs initiated injecting drug use below age 15 are more probable to have sex with more than one partner in Manipur. In Manipur, those YIDUs who reported to have used needle/syringe previously used by someone else are 5 times more likely to have sex with more than one partner in last 12 months. In Nagaland, only migration and living status of young injecting drug users are showing significantly association with partner mixing. Migrant YIDUs are 3 times more likely to have sexual intercourse with more than one partner in Nagaland. Mobility is an important predictor to explain the partner mixing behaviour of young injecting drug users, approximately 3 times and 2 times more likely to have sex with more than one partner in last 12 month.

Married YIDUs are approximately 18 times more likely to use condom in last sex with any type of female partner in Manipur. In Nagaland, Literate and working YIDUs are 3 and 2 times more likely to use condom in last sex. YIDUs who initiate injecting drug within 2 to 5 years of drug use are 2 times more likely to use condom. Mobility is important predictor to explain condom use behaviour in Maharashtra, as mobile YIDUs are 1.5 times more likely to use condom in last sex. YIDUs living with a partner and sharing the needle/syringe with another partner are 4 times and 3 times more likely to condom use in last sex with any type of partner in Maharashtra.

Sexuality Dynamics among Young injecting drug users

Sexual behaviour of young injecting drug users

Variable / response categories	Manipur		Nagaland		Maharashtra					
	Bishunpur (%)		Churachandpur (%)		Phek (%)		Wokha (%)		Mumbai/Thane (%)	
	R1	R2	R1	R2	R1	R2	R1	R2	R1	R2
N	184	96	149	64	302	224	192	96	81	60
Ever had sex with female										
No	51.6	34.2	31.8	26.5	20.9	11.3	14.1	9.4	23.7	12.6
Yes	48.4	65.8	68.2	73.5	79.1	88.7	85.9	90.6	76.3	87.4
Had sex in the last 12 month with female partner										
No	25.8	24.1	17.3	40.4	3.8	2.5	1.8	17.2	32.0	30.3
Yes	74.2	75.9	82.7	59.6	96.2	97.5	98.2	82.8	68.0	69.7
Having sexual partner as a drug user in the last 12 month										
No	79.8	87.2	91.5	96.4	94.1	96.0	92.7	77.9	61.6	84.5
Yes	20.2	12.8	8.5	3.6	5.9	4.0	7.3	22.1	38.4	15.5
No. of female sex partner had sex with in the past 12 month										
No partner	25.8	24.1	17.3	40.4	3.8	2.5	1.8	17.2	32.0	30.3
Single partner	34.8	44.9	49.6	29.8	21.4	16.8	15.8	23.0	24.4	19.1
2-3 partners	19.1	24.1	24.3	27.7	46.6	43.1	41.8	32.2	21.0	11.2
>=4 partners	20.2	6.9	8.8	2.1	28.2	37.6	40.6	27.6	22.6	39.4

Variable / Response categories	Manipur				Nagaland				Maharashtra	
	Bishunpur (%)		Churachandpur (%)		Phek (%)		Wokha (%)		Mumbai/Thane (%)	
	R1	R2	R1	R2	R1	R2	R1	R2	R1	R2
N	184	96	149	64	302	224	192	96	81	60
Ever had sex with different type of female partner										
Paid partner	49.4	71.7	3.3	36.1	5.0	3.0	5.5	11.5	73.9	63.8
Non paid partner	27.0	41.4	32.6	23.4	73.9	86.3	84.2	66.3	36.0	13.1
Other non paid partner	15.9	6.9	57.8	17.0	71.0	53.4	60.0	37.9	69.1	15.1
n	89	63	101	47	238	198	165	87	62	52
Had sex in the last 12 month with different type of female partner										
Paid partner	54.5(44)	57.7(45)	66.7 (3)	70.6(17)	58.3(12)	83.3(6)	77.7(9)	70.0(10)	62.9(46)	68.1(33)
Non paid partner	100(1)	76.4(12)	0(0)	4.6(3)	33.3(3)	85.2(27)	0.0(0)	100(11)	21.9(18)	71.3(3)
Other non paid partner	85.7(14)	50.0(4)	92.3(59)	12.5(8)	55.9(169)	47.6(106)	51.6(99)	100(33)	17.2(6)	86.9(8)
No. of female partner had sex in the past one year										
<i>Paid partner</i>										
None	4.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.2	4.6
1-2 partner	50.0	62.5	100.0	83.3	85.7	60.0	57.1	57.1	58.1	29.4
3-4 partner	20.8	37.5	0.0	16.7	14.3	20.0	42.9	42.9	28.0	25.7
5 and above partner	25.0	0.0	0.0	0.0	0.0	20.0	0	0.0	10.6	40.3
Total	24	26	2	12	7	5	7	7	29	23
<i>Other non paid partner</i>										
None	14.3	50.0	7.6	0.0	0.0	.00	-	0.0	82.7	13.1
1-2 partner	35.7	50.0	75.3	62.5	65.1	56.2	42.4	63.6	17.3	34.3
3-4 partner	21.4	0.0	15.2	37.5	20.7	23.8	38.4	24.2	0.0	26.3
5 and above partner	28.6	0.0	1.9	0.0	14.2	20.0	19.2	12.1	0.0	26.3
Total	14	4	59	8	169	106	99	33	6	8
Condom use at last sex with different female partner										
Paid partner	75(24)	27.2(26)	50.0(2)	83.3(12)	57.1(7)	60.0(5)	28.5(7)	57.1(7)	68.4(29)	73.4(23)
Non paid partner	32.1	32.6(23)	39.4(33)	27.3(11)	41.3(172)	61.8(166)	46.0(139)	46.4(46)	17.3(6)	13.9(6)
Other non paid partner	57.1(14)	25.0(92)	35.0(59)	50.0(8)	74.5(169)	73.3(106)	52.5(99)	63.6(43)	*	73.7(8)

Table 4.1: Covariates of partner mixing among young injecting drug users in IBBA Round 2

	Manipur		Nagaland		Maharashtra	
	Exp(β) Model 1	Exp(β) Model 2	Exp(β) Model 1	Exp(β) Model 2	Exp(β) Model 1	Exp(β) Model 2
Age (years)						
18-20 years®						
21-24 years	.512	.000	.902	.904	.374	.000
Education						
Illiterate®						
Literate	.289	.000	.481	.463	1.169	1.261
Occupation						
Not working®						
Working	1.447	2.459	1.439	1.523	.000	.000
Marital status						
Never married ®						
Ever married	#	#	1.207	2.286	.714	#
Living status						
Without partner®						
With partner	.000	.000	.470	0.284*	2.496***	.000
Migration						
No®						
Yes	2.768*	4.695*	2.640**	2.471**	1.998	.000
Mobility						
No®						
Yes	1.182	1.060	1.450	1.479	3.402**	2.10**
Age at starting injecting drug use(years)						
<15years®						
15-18years		0.025**		.417		.000
>18years		#		.437		#
Duration between first drug use to first injecting drug use						
≤1 years®						
2-5 years		2.285		.959		.599
≥6 years		#		.721		#
Sharing of needle/ syringe in past month						
No®						
Yes		0.126**		1.247		#
Needle /syringe previously someone else has injected with						
No®						
Yes		4.352*		.691		.000
Constant	2.321	#	2.968	8.208	#	#

® reference , #= Small frequency, *(.10), **(.05) & ***(.001)

Table 4.2: Covariates of condom use in the last sex with any type of female partner among young injecting drug user in IBBA Round 2

	Manipur		Nagaland		Maharashtra	
	Exp(β)	Exp(β)	Exp(β)	Exp(β)	Exp(β)	Exp(β)
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Age (years)						
18-20 years						
21-24 years	1.562	.354	1.036	1.680	.384	.540
Education						
Illiterate						
Literate	.715	1.773	3.23***	3.025**	.548	.369
Occupation						
Not working						
Working	1.287	1.556	2.01***	2.257***	1.546	1.417
Marital status						
Never married						
Ever married	13.379**	18.1**	.417	0.256***	.744	.734
living status						
Without partner						
With partner	.177	.155	1.139	1.030	1.214	3.844**
Migration						
No						
Yes	1.111	.912	.988	.866	.190	.139
Mobility						
No						
Yes	1.871	2.200	0.557**	.629	1.099**	1.549**
Age at starting injecting drug use(years)						
<15years						
15-18years		2.096		1.468		.183
>18years		5.354		.745		.089
Duration between first drug use to first injecting drug use						
≤ 1 years						
2-5 years		.753		1.655*		.871
≥ 6 years		2.649		2.510		.600
Sharing of needle/ syringe in past month						
No						
Yes		1.025		.989		2.81***
Needle /syringe previously someone else has injected with						
No						
Yes		.501	.356	1.030		.143
Constant	.183	.112		.202	4.186	62.307

®- reference, #= Small frequency, *(.10), ** (.05) & ***(.001)