INTERNATIONAL JOURNAL OF MEDICAL AND APPLIED SCIENCES
ISSN:2320-3137

Research Article

SAFE SEX AMONG MARRIED MALE IDUs IN MANIPUR: A CROSS-SECTIONAL STUDY

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ABSTRACT

In Manipur, a north eastern state of India, safe sex practice or consistent condom use (CCU) is low particularly among the injecting drug users (IDUs). It is also true that unsafe sex practice by the IDUs either with their spouses or through their extra marital sexual relations with other female partners are important contributing factors for an increase transmission of HIV among general population. Thus this article is initiated to assess safe sex practice among IDUs in Manipur based on the data of a project funded by DBT govt. of India and conducted in 8 districts of Manipur from May 2011 to Sept. 2012 with cooperation of the NGOs implementing targeted intervention program in the state. The study is a cross sectional one. Multi staged sampling and also sampling proportionate to population size were used for selection of study clients. Eligibility criteria for participation in the study are- married IDUs ages between 18 to 49 yrs. who are living with their spouses and willing to participate. Data were collected from 500 IDUs belonging to 33 NGOs. However, blood samples were collected from each pairs i.e. IDU & his spouse to examine their HIV status. Interview was done only with the male IDUs to assess their risky behaviours. Among the study population 81.6% knows their HIV status and only 6.4% have practiced safe sex i.e., safe in any form of sex (vaginal, oral, anal) while the remaining do not use condom consistently. There is a significant increase in the practice of safe sex among those IDUs who do not have extra marital affair (10.8%) as compared to those who are having extra marital affair (3.14%.).

Keyword Safe Sex, Consistent Condom Use (CCU), Injecting Drug User (IDU), Extramarital Sexual Relation (EMSR), Current IDUs.

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INTRODUCTION

According to UNAIDS/WHO estimates there are 33.4 million people living with HIV in the world. Of which 67% are living in Sub Saharan Africa. Altogether more than 95% of PLWHA are living in the developing countries [1]. As per HIV estimates 2008-09, there are an estimated 23.9 lakh people living with HIV/AIDS in India with an adult prevalence rate of 0.31 per cent. Most infections occurred through heterosexual transmission. However, in certain regions, injecting drug users (IDUs), men who have sex with men (MSM) and single male migrants are contributing more in the spread of HIV epidemic.[2].

Manipur, a small state with a population of about 2.7 million [3] and located in the north-eastern region of India, has the highest concentration of HIV infection in the country[4].Even though the state constitute only 0.2% of the national population, it contribute nearly 17% of India's total known HIV cases [5]. Manipur, a landlocked state, is surrounded by Nagaland on the North, Assam on the West, Mizoram on the South, and Myanmar (erstwhile Burma) on the East. The state shares a 358-kilometer border with Myanmar, which is the site of extensive drug trafficking. This drug trade brings high quality heroin into Manipur, which is the drug of choice for majority of the state's IDUs. Manipur's thriving drug trade is primarily due to its geographical vicinity to Myanmar and the 'Golden Triangle' the area where Myanmar, Thailand, and Laos converge, and where heroin is refined in mass amounts and sent out to neighbouring countries. Manipur's location on the route of National Highway 102 (erstwhile NH 39) too makes it highly vulnerable to drug trafficking. [6] Sarkar, et al, 1993 in their study show that the geographic presence of IDUs correlates clearly with the path of the national highway.

According to NACO, 2011, the commonest route of transmission of HIV in India is through unprotected sex and it contributes about 88.7% of all transmission. Carey, 1992 showed in his study that using latex condom is more than 10,000 times safer regarding transmission of HIV than not using a condom [7]. The recent meta-analysis on epidemiological studies of condom effectiveness demonstrates that the consistent use of latex condoms prevents from high proportion of transmission of HIV [8].Considering the above facts we aim to find out in this study the extent of safe sex practice among IDUs in Manipur and its relationship with other selected prognostic variables.

MATERIALS AND METHOD:

A cross sectional study was conducted in the eight districts of Manipur (4 each in hill and in plain areas) during May 2011 to Sept.2012 among married current male IDUs aged between 18 to 49 years and living with their spouses at the time of the survey. Altogether there are 52 TI NGOs in Manipur, (11 in hill districts & 41 in plain districts) working for IDUs. Definition of current IDU in this study was adopted as per NACO norm including only those who used injecting form of drugs at least once during the past three months. Procedures and objectives of the study were explained to the

study population before conducting interview and written consent was taken from each participant (every selected participant gave their consent) Assurance about anonymity of test result and confidentiality of contents of interview was given to the participants. Pre-tested semi structured interview schedule was used for collecting information.

Sample size was calculated taking "P" value as 29, margin of error "L"=2, standard error "e"=4/1.96 at 95% confidence interval. The calculated sample size is 494. Taking the round figure, the sample size is fixed at 500. Institutional Ethical clearance was obtained before the study.

Sample selection:

Multistage sampling technique was used for this study. In first stage, 33 NGOs were selected (9 NGOs in hill & 24 NGOs in plain) depending on the condition that each NGO should have a minimum of 80 married current IDUs in the line list.

In the second stage, allocation of study population for hill and plain areas was made through probability proportionate to size (PPS) and accordingly 124 and 376 IDUs have been allocated for hill and plain areas respectively. In the third stage, fixation of number of IDUs for every hill and plain NGOs was done using the same technique of PPS.

In the fourth stage NGO-wise sampling frames have been prepared and selections of required number of IDUs for each NGO have been done following systematic random sampling technique. This study is a pair study where interview is done only with the IDUs whereas blood samples have been collected from both wife and husband.

Some definitions used in the study are, safe sex practice where condom is used consistently during every sexual act (vaginal, anal & oral) at least for the last three months. Literate IDU is one who can read & write with understanding at least in his local language. Analysis of data was done by X^2 test and SPSS version 21 using multiple logistic regression models. The dependent variable is consistent condom use whereas the explanatory variables considered are - age of the IDUs, occupation, education level, family income, number of living children and self-awareness of HIV status.

RESULTS:

Table 1 show that there is an increasing trend of safe sex practice among IDUs with advancement in their personal age. This is more prominent after 27 years i.e. 7% & 7.5% in 28-37 & 37+years respectively. In the age group of 18-27 years, only a small proportion of IDUs (1.4%) have practiced safe sex method. Religion-wise, Muslims uses comparatively high percentage (10.1%) of safe sex practice followed by Hindu (6.9%), Christian (5.4%) and others groups (1.9%) respectively. In education, except a small percentage of safe sex practice among primary level IDUs, literacy seems to have a little positive association with safe sex practice. For occupation, a fluctuated trend in the use of safe sex is observed. Here, unemployed and private employed IDUs uses highest rate of safe sex practice (9.2 &

ISSN:2320-3137

9 % respectively), followed by daily wage earners with 7.1% while lowest rate is found among manual labourers (2.3%). On the contrary, it is observed that there is a negative correlation between monthly family income and safe sex practice which is evidenced by the finding that as income increases percentage of safe sex practice decreases. Those who have living child use more safe sex practice (7.0%) than those who don't have living child (3.6%). None of the IDUs who don't know their HIV status have used safe sex practice whereas 7.8% of them who knows their HIV status have significantly practiced safe sex method.

Table-2 shows, IDUs whose age is in the range of 28 to 37 years have practiced safe sex around 5 times more than those in 18 to 27 years age range (OR=5.223). Again those IDUs whose age is 37 years and above uses safe sex around 6 times (OR= 5.595) more than those of the reference age category (18-27Yrs.). Muslims has approximately 6 times more use of safe sex than the reference category ("others") while Christians and Hindus have practiced respectively around 3 and 4 times more than the "others" group. For literacy, taken "illiterate" as reference category, it is found that primary education has 18.2% less chance of using safe sex compared with illiterate group. Whereas secondary and higher secondary level studied groups has 0.08% and 3.7% more chance of using safe sex than the reference category.

Unadjusted ORs for occupation indicates that private employed, govt. employed, self-employed, daily wagers and manual labours have respectively 2.9%, 42.2%, 58.3%, 24.4% and 77.1% time les chance of using safe sex practice compared with unemployed category. However, "others" occupation group has 63.9% more chance of using safe sex than unemployed IDUs. Similarly, income groups in the range of Rs.2000 - 4999 and ≥ Rs.5000 have 27.47 and 36 times less chances of using safe sex compared with the reference income category of < "Rs.1999". This may be due to the confounding effects of other variables. Those who have living child have about 2 times more chance of safe sex practice than those who does not have living child. As none of the IDUs who don't know their HIV status have practice safe sex, OR for those who knows their HIV status is found oddly very high indicating a very high chance of using safe sex practice.

Over all, safe sex practice by the IDUs is significantly very poor i.e. 6.4%, $P<0.001$ (Table-1). However, when observation is made separately for age, religion, education, occupation, income and living child, none was found having significant impact on safe sex practice except those who knows their own HIV status in which the impact on safe sex use is statistically high (x^2 =6.45 & P=0.011; Table-1)

ISSN:2320-3137

Table-1 Socio-demographic profiles and safe sex practice

Parameters		Safe sex		χ^2-value	df	P-value
		No	Yes			
Age (yr)	18 - 27	69(98.6%)	1(1.4%)	3.394	2	.183
	28 -37	251(93.0%)	19(7.0%)			
	37+	148(92.5%)	12(7.5%)			
Religion	Hindu	162(93.1%)	12(6.9%)	4.207	3	.240
	Christian	174(94.6%)	10(5.4%)			
	Muslim	80(89.9%)	9(10.1%)			
	Others	52(98.1%)	1(1.9%)			
Education	Illiterate	14(93.3%)	1(6.7%)	.269	3	.966
	Primary level	137(94.5%)	8(5.5%)			
	Secondary level	236(93.3%)	17(6.7%)			
	College & Hr edn.	81(93.1%)	6(6.9%)			
Occupation	Unemployed	59(90.8%)	6(9.2%)	6.240	6	.397
	Private employed	81(91.0%)	8(9.0%)			
	Govt. employed	17(94.4%)	1(5.6%)			
	Self employed	165(95.9%)	7(4.1%)			
	Daily wagers	91(92.9%)	7(7.1%)			
	Manual labours	43(97.7%)	1(2.3%)			
	Others	12(85.7%)	2(14.3%)			
Monthly family Income (Rs)	< 1999	99(91.7%)	9(8.3%)	.938	2	.626
	2000 - 4999	197(93.8%)	13(6.2%)			
	5000+	172(94.5%)	10(5.5%)			
Living child	No	81(96.4%)	3(3.6%)	.841	1	.359
	Yes	387(93.0%)	29(7.0%)			
HIV status known	No	92(100.0%)	-	6.455	1	.011
	Yes	376(92.2%)	32(7.8%)			
Total		**468 (93.6%)**	**32(6.4%)**	**234.714**	**1**	**<0.001**

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Table-2 Unadjusted causal effects of socio-demographic factors with the practice of safe sex

Parameters		β	P-value	OR (unadjusted)	95.0% C.I. for OR	
					Lower	Upper
Age (yr)	18 - 27			1		
	28 -37	1.653	.110	5.223	.687	39.708
	37+	1.722	.101	5.595	.713	43.891
Religion	Others			1		
	Christian	1.095	.302	2.989	.374	23.894
	Hindu	1.349	.200	3.852	.489	30.336
	Muslim	1.766	.098	5.850	.720	47.547
Education	Illiterate			1		
	Primary education	-.201	.854	.818	.095	7.021
	Secondary education	.008	.994	1.008	.125	8.134
	Hr. Sec. education	.036	.974	1.037	.116	9.282
Occupation	Unemployed			1		
	Private employed	-.029	.959	.971	.320	2.948
	Govt. employed	-.547	.623	.578	.065	5.141
	Self employed	-.874	.129	.417	.135	1.292
	Daily wagers	-.279	.631	.756	.242	2.362
	Manual labours	-1.475	.179	.229	.027	1.969
	Others	.494	.573	1.639	.295	9.120
Monthly family income (Rs)	< 1999			1		
	2000 - 4999	-.320	.477	.726	.300	1.756
	5000+	-.447	.348	.640	.251	1.627
Living child	No			1		
	Yes	.705	.255	2.023	.602	6.802
HIV status known	No			1		
	Yes	18.739	.996	1E+008	.000	

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Table-3 Adjusted causal effects of socio-demographic factors on the chance of safe sex

Parameters		β	P-value	OR (adjusted)	95.0% C.I. for OR	
					Lower	Upper
Step 1	Age	.050	.095	1.052	.991	1.116
	Religion (Hindu)	1.283	.225	3.608	.454	28.693
	Religion (Christian)	1.287	.228	3.623	.447	29.366
	Religion (Muslim)	1.890	.080	6.622	.800	54.819
	Education	.207	.851	1.229	.142	10.619
	Occupation	-.671	.184	.511	.190	1.375
	Income	-.176	.684	.839	.360	1.954
	Living child	.542	.401	1.720	.485	6.092
	HIV status known	18.595	.996	1E+008	.000	.
	Constant	-24.173	.995	.000		
Step 2	Age	.050	.096	1.051	.991	1.116
	Religion (Hindu)	1.281	.226	3.601	.453	28.634
	Religion (Christian)	1.286	.228	3.617	.446	29.309
	Religion (Muslim)	1.876	.081	6.525	.792	53.744
	Occupation	-.672	.183	.511	.190	1.373
	Income	-.167	.698	.846	.365	1.963
	Living child	.548	.395	1.730	.489	6.116
	HIV status known	18.594	.996	1E+008	.000	.
	Constant	-23.970	.995	.000		
Step 3	Age	.052	.083	1.053	.993	1.117
	Religion (Hindu)	1.280	.226	3.598	.453	28.600
	Religion (Christian)	1.287	.228	3.622	.447	29.349
	Religion (Muslim)	1.880	.080	6.556	.796	53.982
	Occupation	-.702	.160	.496	.186	1.318
	Living child	.525	.413	1.690	.481	5.943
	HIV status known	18.609	.996	1E+008	.000	.
	Constant	-24.124	.995	.000		
Step 4	Age	.053	.073	1.055	.995	1.118
	Religion (Hindu)	1.273	.229	3.570	.449	28.360
	Religion (Christian)	1.240	.245	3.455	.428	27.918
	Religion (Muslim)	1.912	.075	6.765	.823	55.621
	Occupation	-.658	.184	.518	.196	1.368
	HIV status known	18.628	.996	1E+008	.000	.
	Constant	-23.756	.995	.000		

Step 5	Age	.050	.093	1.052	.992	1.116
	Religion (Hindu)	1.304	.217	3.683	.465	29.203
	Religion (Christian)	1.295	.224	3.649	.453	29.402
	Religion (Muslim)	1.867	.082	6.472	.789	53.095
	HIV status known	18.654	.996	1E+008	.000	.
	Constant	-24.262	.995	.000		
Step 6	Age	.050	.095	1.051	.991	1.114
	Religion (Hindu)	.225	.604	1.253	.534	2.939
	Religion (Muslim)	.788	.097	2.199	.867	5.577
	HIV status known	18.612	.996	1E+008	.000	.
	Constant	-23.115	.996	.000		
Step 7	Age	.051	.089	1.052	.992	1.116
	Religion (Muslim)	.678	.106	1.970	.866	4.480
	HIV status known	18.644	.996	1E+008	.000	.
	Constant	-23.075	.996	.000		
Step 8	Age	.049	.100	1.050	.991	1.113
	HIV status known	18.652	.996	1E+008	.000	.
	Constant	-22.861	.996	.000		

In order to assess individual effect of each parameter on safe sex practice by eliminating confounding effects of other parameters, stepwise logistics regression analysis (Back Ward Conditional) is adopted in which one less important parameter is eliminated from each previous steps thereby leaving only the important factors at the end of analysis.

In step-1, it is seen that with every change in the age range from 18-27, to 28 – 37 and from 28-37 to > 37 years there is a chance of more safe sex practice by 5.2% while keeping effects of other parameters constant. Muslims has approximately 7 times while Christians and Hindus has about 4 times more chance of safe sex practice than "others group (reference group). Literate IDUs has 22.9% more chance of safe sex use than the illiterate IDUs. On the contrary, employed IDUs have 48.9% less chance of safe sex practice than the unemployed. With increase in the monthly family income from < Rs.1999 to Rs.2000 and above, there is 16.1% less chance of using safe sex after eliminating the effects of other parameters. However, 72% more chance of using safe sex is witnessed in those IDUs who have living child as against those who don't have living child. After controlling confounding effects of other variables another striking finding here is that those IDUs who know their HIV status has a high contrast of using more safe sex practice than those who don't know their HIV status.

In subsequent steps, interpretations can be made in a similar pattern and thus finally in the last step (step 8) there are only two parameters retained i.e., age and known personal HIV status with corresponding ORs of 1.050 and 1E+008 which have

ISSN:2320-3137

positive impacts on safe sex practice and therefore indispensable.

DISCUSSION:

In the present study, majority (54%) of the IDUs are in the age group of 28-37 years and more than two third of them are Christian (36.8%) and Hindu (34.8%) by religion. Most of the IDUs (94.5%) are literate at least up to primary level. In a study of Solomon et al, May 2008 in Chennai, majority (57.6%) of the clients had either primary or no formal education [9]. In our study 19.6% of IDUs are daily wage earner and 13% are unemployed which in the study of Solomon et al were 82% and 11.9% respectively. Demographic data also showed that 20.8% IDUs are living in families earning less than 3000 INR per month whereas the_study in Chennai [9], 92.4 per cent of the HIV-infected IDUs earned less than INR 3000 per month. These variations could be because of the differences in the study period and also differences in socio-economic conditions of the participants being hailed from different states.

In another study in South Africa, during 2012 most of the participants (27%) are in the age group of 30-39 years. Fifty-eight percent (58%) of them have no formal education/below grade 12. Only a small proportion of the participants (7%) have completed higher education [10] (degree/ diploma) as compared to 17.4% in our finding.

As per a study by Liu et al, 2010 in China, majority of the clients are in the age group of 15-25 years. About 30.4% of the IDUs have completed primary level of education whereas 16% of them are unemployed and 54.5% have Income less than Rs.1000 per month [11].

In our study, 6.4% of the IDUs uses condom consistently during the past 3 months while according to UNODC- 2012, 19% of IDUs in North East India uses condoms consistently in the past 3 months [12]. This variation may be due to the difference in the type of study population, place where study is being carried out and sampling methodologies. In UNODC study, data were collected from both IDUs and their sexual partners (regular & casual) selected from three north eastern states viz Manipur, Mizoram & Nagaland using non probability sampling technique. In another study of Mishra RK, 2009 in Manipur & Nagaland, the rate of CCU among IDUs of project orchid funded NGO's in Ukhrul & Chandel district of Manipur was 14.9% and 5.8% respectively. Our finding of safe sex is the average of all IDUs belonging to eight districts of Manipur and comprising of different religious groups. A year wise increase in the prevalence of HIV is also noticed during the last about 3 to 4 years in Ukhrul district of Manipur which is consider of being driven mainly by heterosexual route. Moreover, a wide gap in the sample size of IDUs from this district between our study and that of Mishra RK may be an important contributing factor resulting to this difference in safe sex rates. However, safe sex findings for chandel district are almost comparable.

On univariate analysis to see association of different demographic characteristics with safe sex, it was found that there was no association between safe sex and variables like - age, religion, education, occupation, family income, and any living children of the IDUs. However, knowledge of self HIV status is found to be significantly associated with safe sex ($p=0.011$). In a study by Shengyuan Liu et al, in China - 2010 among MSM population it was found that different variables like age group, education and

vocation are not associated with CCU while monthly family income is found to be significantly associated (P=0.02) with the practice. However their study was based on MSM population and not among IDU population and hence the findings may not be comparable with our study. Nevertheless this finding could certainly throw a light about the risky sexual behaviour of HRG population in general. IDUs under the effect of drugs are likely to behave without any justification, however once he knows his HIV status it is possible that they adopt a comparatively responsible behaviour regarding safe sex.

CONCLUSION:

Majority of the IDUs (54%) are in the age group of 28-37 yrs. Christians and Hindus are the two main religious groups comprising of 71.6% of the total. Literacy rate is high with 94.5% studying up to primary level. A large proportion of them indulges in different income earning occupations and 78.4% IDUs belonged to families having monthly income of ≥ Rs.2000. On univariate analysis it was found that there is no association between safe sex and other independent variables like- age, religion, literacy status, occupation etc. However, self-knowledge of HIV status is found to be significantly associated with safe sex practice (X^2 =6.455, P=<0.011). Also while analysing using Adjusted Odds ratio; it was observed that Age & knowledge of self HIV status are the two factors strongly associated with safe sex practice by the IDUs.

There are some limitations encountered during conducting the present study. As the study area covers entire state of Manipur there were operational problems like contacting study populations crossing difficult hilly terrains. Communication with different ethnic groups speaking different dialects, coordination with a large number of program implementers are another additional challenges faced during the study. Limited number of similar type of studies also creates great disadvantages while comparing the result of our findings and quoting references. Information bias may limit subjects to provide accurate information on certain sensitive Issues such as sexual behaviours, extra marital affairs, etc. However, all possible precautionary measures were taken to reduce biases in this study by probing and establishing good rapport.

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