

Research paper

A rapid situation and response assessment of the female regular sex partners of male drug users in South Asia: Factors associated with condom use during the last sexual intercourse

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Abstract

Objectives: We carried out a rapid assessment among the female regular sex partners of drug users/injecting drug users recruited from Bangladesh, Bhutan, India, Nepal and Sri Lanka with the objective of designing appropriate responses targeting them. We examined the correlates of condom use among them.

Methods: Data was collected from 4612 female regular sex partners recruited by different NGO partners spread across the five countries in the region. We carried out univariate and multivariate logistic regression analysis to determine variables associated with condom use during their last sexual intercourse.

Results: Of the total sample, 22% admitted to using drugs ever in their life and 21% reported condom use during the last sexual act. A fourth of the participants have not heard of HIV/AIDS and only 17% have been tested for HIV. In a multivariate model, women engaged in sex work, from Nepal, used drugs before last sexual intercourse, heard of HIV/AIDS, ever used drugs and approached by someone with information on HIV were likely to have used condoms during the last sexual intercourse about twice or more: (AOR = 4, 95% CI: 3, 5.3; AOR = 3.4, 95% CI: 2.4, 4.9; AOR = 2.5, 95% CI: 1.9, 3.3; AOR = 2.1, 95% CI: 1.5, 3; AOR = 2, 95% CI: 1.5, 2.6; AOR = 1.7, 95% CI: 1.4, 2 respectively). Condom use was negatively associated with women with a single sex partner (AOR = 0.6, 95% CI: 0.5, 0.7).

Conclusions: Condom use is low among the female regular sex partners and is primarily associated with women exhibiting risky practices. Apart from sustaining and expanding HIV prevention programmes that aim to increase the HIV/AIDS related knowledge and scale-up HIV testing among the drug users and their regular sex partners, there is an urgent need to reach out to the women in stable marital relationship with drug users. This study has demonstrated that it is feasible to access this population and the priority is to design and implement individual, couple and group level interventions that ensure consistent condom use with their primary partners.

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Keywords: Injecting drug use; Female regular sex partners; South Asia; HIV prevention; Condom use

Introduction

During the past two decades, injecting of opioids has diffused in the South Asian region particularly in India, Nepal, Pakistan and Bangladesh. The UN Reference group estimates that there are about 3.3 million injecting drug users (IDUs) in South and Southeast Asia (Aceijas, Stimson, Hickman, & Rhodes, 2004). HIV/AIDS among drug using populations has been reported from Nepal, India, Pakistan and Bangladesh

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and HIV among drug users is emerging as an important regional problem. Serological surveillance has recorded a rise in HIV prevalence among IDUs in Central Bangladesh with prevalence rising from 1.4% in 1999–2000 to 4.0% in 2002 and maintaining at 4% during 2003–2004 (Azim et al., 2004).

Ever since the first report of HIV infection amongst IDUs in northeast India in 1989, there has been diffusion of HIV among IDUs in different parts of India. In the HIV/AIDS epidemiological surveillance for the year 2005, the national HIV prevalence among IDUs is reported to be 10.2%; of the fourteen states in which IDU sentinel surveillance is operational, HIV prevalence among IDUs is >5% in nine states (NACO, 2006). Despite initial optimism that an incipient epidemic of HIV in Nepal had been averted through the establishment of education programs (Peak, Rana, Maharjan, Jolley, & Crofts, 1995), more recent data have shown a sharp rise in the HIV prevalence in the country. Between 1995 and 1997, HIV seroprevalence among IDUs of Kathmandu rose from 0% to 40 to 50% (Oelrichs, Shrestha, Anderson, & Deacon, 2000). In Sri Lanka, it is estimated that there are currently about 45,000 regular users of heroin and between 1% and 2% of heroin users are IDUs (UNODC, 2005a, b). Sri Lanka is a low HIV-prevalence country and the national prevalence of HIV is estimated to be below 0.1% (UNAIDS, 2006).

Effective HIV control in South Asia can be achieved by targeting and providing scaled-up evidence based interventions for the most-at-risk populations like sex workers, their clients, men having sex with men (MSM) and IDUs. Given the potential for the sexual transmission of HIV from IDUs to their non-injecting sex partners in South Asian settings (Chakrabarti et al., 2000; Devi Kh, Brajachand, Singh, & Singh, 2005; Eicher, Crofts, Benjamin, Deutschmann, & Rodger, 2000; Sharma, Aggarwal, & Dubey, 2002), addressing the HIV vulnerability of the female partners of IDUs is a critical concern in South Asia.

Sexual HIV transmission in the context of injecting drug use has been documented (Rhodes, Stimson, & Quirk, 1996; Sidel et al., 2003; Strathdee & Sherman, 2003) and the sexual behaviour of IDUs and drug users is important in the transmission of HIV from them to their female partners. Apart from unsafe injection practices, sexual risk behaviour is high among IDUs in India (Panda et al., 1998), Bangladesh (Rahman, Zaman, Sekimoto, & Fukui, 2000) and Pakistan (Emmanuel, Akhtar, Attarad, & Kamran, 2004). Further, non-injecting drug users also exhibit high-risk sexual behaviours increasing the HIV/STI vulnerability to their sex partners (Gyarmathy, Neaigus, Miller, Friedman, & Des Jarlais, 2002; Haque et al., 2006; Sharma et al., 2002). Since a considerable proportion of male drug users in South Asia are married (Islam, Hossain, Kamal, & Ahsan, 2003; Kumar et al., 2000; UNODC, 2002), preventing the sexual transmission of HIV to the regular sex partners of IDUs and drug users is important.

Male latex condom is the single, most efficient, available technology to reduce the sexual transmission of HIV and other sexually transmitted infections. Despite this, there are several barriers to condom use among the primary part-

ners of IDUs. Many regular partners of IDUs are unaware of the sexual and injecting risk practices of their spouses; and, among women who worry about HIV/AIDS, majority would not initiate condom use because they feared their partner's reaction (Go, Quan, Voytek, Celentano, & Nam le, 2006). Relationship dynamics plays a major role in condom negotiation with primary partners and there are several barriers to condom use in South Asian settings. In long-term relationships, unprotected sex is perceived to demonstrate intimacy and trust between the partners, and safety is compromised in order to establish commitment. Insistence on protected sex is interpreted as a suspicion of infidelity (Kumar, 2004). Furthermore, in South Asia, power and control in sexual relationships is unevenly distributed by gender (Gupta, 2002). Currently in South Asia, IDU targeted interventions provide the HIV prevention services primarily to the opioid users and hence it is suggested that in order to be effective, interventions have to reach out to the regular sex partners of drug users as well (Panda et al., 2007).

Methods

The project 'Prevention of transmission of HIV among drug users in SAARC countries' is a regional project that is being carried out in Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka by the United Nations Drug Control Programme Regional Office for South Asia (UNODC ROSA). The goal of this project is to reduce the spread of HIV among drug using populations in SAARC countries and its purpose is to assist governments and communities to scale-up comprehensive prevention and care programs for drug users, especially IDUs and their regular sex partners. In the first phase of the project, Rapid Situation and Response Assessments (RSRAs) of drug users and their regular sex partners were carried out in the five countries of Bangladesh, Bhutan, India, Nepal and Sri Lanka before implementing HIV prevention and care interventions for them.

The RSRAs were carried out with the help of the intervention tool-kit "Introduction to HIV intervention tool-kit and Basics of conducting rapid situation and response assessment" developed by this project (UNODC ROSA, 2005). Sites were assured of intervention development based on the assessment findings with budgetary support. Crucial factors such as commitment (at the organisational as well as political level) and the mapping of resources that can be tapped later for intervention development and implementation in order to ensure sustainability were considered before conducting the RSRAs. The capacity of the agencies implementing the assessment and intervention was carefully evaluated. Agencies with the capacity for the implementation of RSRAs and supervision of interventions (referred as mentor agencies) were identified in the five countries and they were given the responsibility of identifying and coordinating with the partner NGOs. Overall, there were eight mentor agencies for India (one each for South, West, North regions; two for east-

Table 1
Distribution of the sample of female regular sexual partners of drug users from different countries

Country	Assessment site	Sample size	Percent
Bangladesh	Dhaka	136	2.9
Bhutan	Thimbu	23	0.5
India	Jammu	135	2.9
	Delhi	70	1.5
	Lucknow	187	4.1
	Kolkata	301	6.6
	Khurda	150	3.3
	Muzzafarpur	134	2.9
	Darjeeling	103	2.2
	Jamshedpur	172	3.7
	Mumbai	161	3.5
	Pune	188	4.1
	Bhopal	180	3.9
	Thiruvananthapuram	66	1.4
	Namakkal	165	3.6
	Chennai, south	76	1.6
	Imphal	330	7.2
	Churachandpur	180	3.9
	Dimapur/Wokha	151	3.3
	Kohima	158	3.4
	Shillong	150	3.3
	Aizawl	166	3.6
Kolasib	105	2.3	
	India total	3328	72.2
Nepal	Kathmandu	278	6
	Rupendahi	139	3.0
	Nepal total	417	9
Sri Lanka	Colombo	352	7.6
	Polonnaruwa	356	7.7
	Sri Lanka total	708	15.4
Total		4612	100.0

ern region; three agencies for Northeastern region) and one mentor agency each for the countries of Bangladesh, Bhutan, Nepal and Sri Lanka.

The partner NGO agencies have been working with the drug users at grass-root level in their respective locales and they were given the task of carrying out the RSRAs in their areas. The RSRA was carried out in a total of 27 assessment sites (Table 1).

Sample and measures

The NGO partners were responsible for the recruitment of drug users and their regular sex partners for assessment and data collection. The recruitment was always confined to specified geographical locations identified by the NGO partners in consultation with the mentor agencies. The geographical areas included for assessment are areas with high prevalence of drug use and in each country known town(s)/cities with high prevalent drug use were selected (Table 1). The project emphasised on recruiting opioid users (both injecting

and non-injecting) for the assessment. The project aimed to recruit 250 male drug users/IDUs and about 150 female regular sex partners in each of the assessment sites. The RSRA team mapped drug-using clusters, observed at drug using venues, conducted key informant interviews and focus group discussions with drug users in each of the assessment sites before recruiting the sample for survey. The peer outreach workers with the support of the peer volunteers who were familiar with the drug use scenario in their locality recruited male opioid users. All drug users providing informed consent for a survey interview were included. Using snow-ball technique, the RSRA team recruited the sample from the community through street outreach. The sample was purposive in order to include a broad range of drug users to be representative of the drug users in the community. The drug users recruited were requested to bring their female regular sex partner for the assessment. The inclusion criterion was women who are spouses or living as regular (primary) partners with the male drug users. All consenting female regular partners were interviewed and the number of refusals to participate was negligible. The identified regular female sex partners were reached and interviewed by the women outreach workers. Subsequent to the assessment, the outreach team and the peer volunteers continued to remain in touch with the drug users and their partners for the purpose of providing peer-led HIV interventions and other services. Overall, the RSRA reached 9,465 current drug users and 4612 of their female regular sex partners (4612/9465; 48.7%) for the assessment. Table 1 shows the number of female regular partners of drug users recruited from different assessment sites. This report is focused only on the assessment findings from the 4612 female regular sex partners of male drug users. The findings of the assessment on drug users are to be published by UNODC ROSA as a report.

The data for the study were collected by the peer outreach coordinators (the woman coordinator collecting the data from the regular sex partners) over a 3-month period (June–August 2005) in the four countries of Bangladesh, India, Nepal and Sri Lanka. The RSRA in Bhutan was carried out in May 2006.

The data was collected after obtaining informed consent. It was assured to all participants that refusal to be part of assessment will not lead to denial of any of the services offered by the implementing NGO partner. The interviews were held in the drop-in-centres of the NGO partners or at times in the field at a convenient and secure place. The study was not originally intended as research but as an assessment to develop appropriate interventions for drug users and their sex partners. The project with all its components was approved by the UNODC headquarters and the project steering committee consisting of various stakeholders from the participating countries. In addition, the project including the RSRA was approved by the community advisory boards of the implementing NGO partners.

Information from the drug users and their regular sex partners was collected through separate structured interview schedules that were specially developed for this project by

an international expert. Data from the female regular sex partners was collected on demographic characteristics; drug use; sexual practices and behaviours; self reported symptoms during the past year; risk perception and HIV/AIDS knowledge through structured questions with coded responses. We operationalised drug use status of the female regular sexual partner by ever use of drugs. Condom use by the regular partner was assessed in the questionnaire for the last sexual intercourse. We summarised the findings of the rapid assessment survey using descriptive statistics to describe the demographic characteristics, drug use status, sexual behaviours, health status, risk perception and HIV/AIDS knowledge of the female regular sexual partners of drug users by country. We then calculated the odds ratios (ORs) for different correlates of condom use during the last sexual intercourse, taking those female sex partners reporting condom use during the last sexual intercourse as cases and those not using condoms during the last sexual intercourse as controls. The variables for entry to multiple logistic regression were binary variables coded as yes or no. All potential correlates of condom use and factors having significance ($P < 0.1$) in univariate analysis were subsequently entered in a multivariate logistic regression model to identify the variables associated condom use during the last sexual intercourse. Adjusted odds ratios and 95% confidence intervals summarizing the association between the selected variables and condom use during the last sexual intercourse were calculated. The data was analysed using software packages Epi Info (version 6.4b, Centers for Disease Control, Atlanta, GA, in collaboration with World Health Organization, Geneva, Switzerland) for frequency distribution and univariate analyses. SPSS (version 15; SPSS Inc., Chicago, IL) was used for multiple logistic regression analysis.

Results

Description of the sample characteristics

Of the 4612 female regular sex partners of male drug users who participated in this study, the majority were recruited from India (72%), followed by Sri Lanka (15%), Nepal (9%), Bangladesh (3%) and Bhutan (0.5%). The demographic characteristics, drug and sex history and illness history of the entire sample from the five countries and the sub-sample from each country, namely Bangladesh, Bhutan, India, Nepal and Sri Lanka are shown in Table 2. The median age for the entire sample was 28 years and the median age of participants from Nepal, Bangladesh, India and Sri Lanka were 25, 26, 29 and 30 years respectively. Nearly three fourths of the respondents participating in this assessment were married. The female regular sex partners in South Asia had a median number of 2 children. A fourth of the respondents were illiterate with Sri Lanka reporting low illiteracy rates (10%) whereas almost half of the participants (49%) from Bangladesh were illiterate. Overall, 40% of the female regular sex partners were

employed. A small proportion of the total sample of regular sex partners (9%) were engaged in sex work, while in Bangladesh 23% of the participants reported engaging in sex work. Fourteen percent of the respondents reported that their children dropped out of school due to burden faced by drug use. Three fourths of the female regular sex partners of drug users spent their monthly income on their male partner and/or personal drug use.

Of the total sample, 22% admitted to using drugs ever in their lifetime. Participants from Bangladesh reported 35% ever drug use followed by Nepal (29%), Sri Lanka (23%) and India (20%). The median age for sexual debut was 18 years for the total sample. Twenty one percent of the total participants reported condom use during the last sexual intercourse. Condom use during the last sexual intercourse was highest in Nepal (37%) and lowest in Bangladesh (10%). About one out of six participants (17%) reported using drugs before the last sexual intercourse. Anal sex was reported by 12% of the total sample and 34% of the female regular sex partners in Bangladesh reported anal sex with their male partner.

The prevalence of self reported symptoms during the past year relating to sexually transmitted infections was common. White vaginal discharge was reported by just over a third (34%) of the respondents, ulcer over the genitalia by 13% and burning sensation while passing urine by 30% respondents. Help-seeking for the above symptoms was not uncommon with almost a fourth (24%) of the participants seeking help for these symptoms during the last year.

The knowledge and attitudes in relation to HIV/AIDS of the entire sample from the five countries and the sub-sample from each country, namely Bangladesh, Bhutan, India, Nepal and Sri Lanka are shown in Table 3. A fourth of the participants in the five countries had not heard of HIV/AIDS. In Sri Lanka 30% of the participants had not heard of HIV/AIDS and in India 26% of the respondents had not heard of HIV/AIDS. The participants with correct knowledge about HIV transmission through contaminated needles and syringes were 61%; by blood transfusion from a HIV infected person were 68%; from a HIV infected mother to the child during birth were 60%; and through breast feeding to the child by HIV infected mother were 48%. A small proportion of the respondents (8%) believed that they could identify the HIV infected person by appearance. Half of the participating regular sex partners were aware that sexual transmission of HIV could be prevented through condoms. Nearly a fourth of the respondents (24%) perceived that they were at-risk for contracting HIV and only 17% of the participants had been tested for HIV. Of the total participants 31% stated that they would be willing to disclose the HIV test results if they tested positive while 36% of them opined that they would be disclosing if they tested negative for HIV infection. Forty-four percent of the regular sex partners of drug users had been approached by someone with information on HIV/AIDS. Only 11% and 15% of the participants felt that they were treated like others in Government and private health care facilities respectively.

Table 2
Frequency distribution of demographics, drug use, sexual behaviour and illness history of regular sex partners of drug users in South Asian countries of Bangladesh, Bhutan, India, Nepal and Sri Lanka

Characteristic	Bangladesh (<i>n</i> = 136)	Bhutan (<i>n</i> = 23)	India (<i>n</i> = 3328)	Nepal (<i>n</i> = 417)	Sri Lanka (<i>n</i> = 708)	Total (<i>N</i> = 4612)
Demographics						
Age [†]	26 (14–50) 28 ± 6.8	22(17–33) 22.5 ± 4	29(14–70) 29.8 ± 7.5	25(14–57) 26 ± 5.8	30(16–77) 32.2 ± 10.5	28 (14–77) 29.7 ± 8
Married	121 (89%)	10 (43.5%)	2423 (72.8%)	330 (79.1%)	518 (73.2%)	3402 (73.8%)
Number of children [†]	2 (0–9) 2.1 ± 1.4	0 (0–3) 1 ± 0.9	2(0–10) 2.2 ± 1.5	1 (0–7) 1.6 ± 1.2	2 (0–9) 2.3 ± 1.6	2 (0–16) 2.2 ± 1.5
Illiterate	66 (48.5%)	3 (13%)	946 (28.4%)	106 (25.4%)	69 (9.7%)	1190 (25.8%)
Employed	98(72.1%)	18 (78.3%)	1359 (40.8%)	180 (43.2%)	202 (28.5%)	1857 (40.3%)
Engaged in sex work	31 (22.8%)	0 (0%)	249 (7.5%)	57 (13.7%)	74 (10.5%)	411 (8.9%)
Children dropped out of school	28 (20.6%)	1 (4.3%)	461 (13.9%)	109 (26.1%)	35 (4.9%)	634 (13.7%)
Money spent for drug use of partner and/or self	108 (79.4%)	13 (56.5%)	2484 (74.6%)	262 (62.8%)	571 (80.6%)	3438 (74.5%)
Drug history and sex history						
Ever used drugs	48 (35.3%)	11 (47.8%)	649 (19.5%)	121 (29%)	166 (23.4%)	995 (21.6%)
Age at first sex	16(11–25) 16 ± 2.8	19(14–24) 19 ± 2.8	18(11–37) 18.4 ± 3.1	17(11–31) 17.5 ± 3	18(11–35) 18.7 ± 3.7	18(11–37) 18.3 ± 3.2
Number of sex partners	1 (1–4) 1.4 ± 1.1	1 (1–3) 1.6 ± 0.8	1 (1–150) 2.3 ± 5.1	1 (0–50) 2.9 ± 5.6	1(0–1800) 15 ± 112	1(0–1800) 3.7 ± 37.4
Condom use, last sex	14 (10.3%)	7 (30.4%)	717 (21.5%)	152 (36.5%)	83 (11.7%)	973 (21.1%)
Drug use before last sex	45(33.1%)	2 (8.7%)	554 (16.6%)	101 (24.2%)	79 (11.2%)	781 (16.9%)
Anal sex ever with sex partner	46(33.8%)	3 (13%)	455 (13.7%)	20 (4.8%)	45 (6.4%)	569 (12.3%)
Illness history						
Tb, last year	6 (4.4%)	0 (0%)	240 (7.2%)	19 (4.6%)	28 (4%)	293 (6.4%)
White vaginal discharge, last year	83 (61%)	3 (13%)	1308 (39.3%)	117 (28.1%)	45 (6.4%)	1556 (33.7%)
Ulcer on the genitalia, last year	24 (17.6%)	3 (13%)	515 (15.5%)	35 (8.4%)	16 (2.3%)	593 (12.9%)
Pain/burning sensation during urination, last year	65 (47.8%)	4 (17.4%)	1148 (34.5%)	91 (21.8%)	74 (10.5%)	1382 (30%)
Sought treatment for any of the above, last year	54 (39.7%)	2 (8.7%)	915 (27.5%)	78 (18.7%)	63 (8.9%)	1112 (24.1%)

[†] Median age and range followed by mean ± S.D.

Table 3
Frequency distribution of HIV/AIDS Knowledge and attitudes of regular sex partners of drug users in South Asian countries of Bangladesh, Bhutan, India, Nepal and Sri Lanka

Characteristic	Bangladesh (n = 136)	Bhutan (n = 23)	India (n = 3328)	Nepal (n = 417)	Sri Lanka (n = 708)	Total (N = 4612)
Ever heard of HIV/AIDS	133 (97.8%)	19 (82.6%)	2453 (73.7%)	366 (87.8%)	496 (70.1%)	3467 (75.2%)
Knowledge of HIV transmission						
Contaminated needles/syringes	98 (72.1%)	15 (65.2%)	2014 (60.5%)	304 (72.9%)	379 (53.5%)	2810 (60.9%)
Blood transfusion from infected person	111 (81.6%)	16 (69.6%)	2227 (66.9%)	333 (79.9%)	458 (64.7%)	3145 (68.2%)
Mother to child	109 (80.1%)	16 (69.6%)	1979 (59.5%)	242 (58%)	397 (56.1%)	2743 (59.5%)
Breast feeding	100 (73.5%)	7 (30.4%)	1579 (47.4%)	138 (33.1%)	375 (53%)	2199 (47.7%)
Know HIV infected by appearance	14 (10.3%)	0 (0%)	259 (7.8%)	46 (11%)	58 (8.2%)	377 (8.2%)
Condom is protective	91 (66.9%)	15 (65.2%)	1748 (52.5%)	304 (72.9%)	150 (21.2%)	2308 (50%)
Risk of getting HIV	81 (59.6%)	8 (34.8%)	825 (24.8%)	94 (22.5%)	118 (16.7%)	1126 (24.4%)
Ever tested for HIV	4 (2.9%)	3 (13%)	597 (17.9%)	82 (19.7%)	96 (13.6%)	782 (17%)
Share results with partner, if positive	106 (77.9%)	17 (73.9%)	848 (25.5%)	183 (43.9%)	268 (36.7%)	1414 (30.7%)
Share results with partner, if negative	107 (78.7%)	16 (69.6%)	1077 (32.4%)	191 (45.8%)	268 (37.9%)	1659 (36%)
Approached by someone to give information	58 (42.6%)	11 (47.8%)	1569 (47.1%)	205 (49.2%)	175 (24.7%)	2018 (43.8%)
Treated well at Govt health care settings	37 (27.2%)	18 (78.3%)	286 (8.6%)	103 (24.7%)	74 (10.5%)	518 (11.2%)
Treated well at private health care settings	38 (27.9%)	5 (21.7%)	478 (14.4%)	87 (20.9%)	105 (14.8%)	713 (15.5%)

Univariate associations between condom use during the last sexual intercourse and potential correlates are given in Table 4 and the variables that were associated with the condom use identified by multiple logistic regression analysis are shown in Table 5.

Discussion

This study is unique as it reached out to the female regular sex partners of the IDUs and drug users across five countries in South Asian region and assessed them for drug use, sexual behaviour, knowledge relating to HIV/AIDS and self reported symptoms. Nearly a half of the 9465 current drug users recruited for rapid assessment, brought their spouses or regular sex partners for assessment. Of these current drug users, 4998 (53%) are IDUs. The IDUs exhibit high levels of injection related risk behaviours and the total sample of drug users and IDUs exhibit high-risk sexual behaviours. For example, nearly a third (32%) of the 9465 drug users reported no condom use during the last sex with the commercial sex partner (UNODC ROSA, unpublished report). The regular sex partners of the male drug users in the South Asian region are at risk of acquiring STI/HIV and thus reaching out to this population becomes a priority. We have demonstrated the feasibility of accessing and assessing the regular sex partners of drug users and this was made possible by having women outreach workers and women peer volunteers in the study team. Current HIV prevention programmes in South Asia target mainly male IDUs and the outreach and drop-in-centre based services are primarily provided by male outreach workers and peer educators. In future, all targeted interventions for IDUs/drug users should be gender sensitive and include women members in the intervention team in order to access and deliver services for the female sex partners.

The study has shown several important findings that are relevant for planning responses targeting the female regular sex partners. Countries in the region have invested a lot on increasing awareness among the populations. Despite this, a fourth of the regular sex partners in the region have not heard of HIV/AIDS. Correct knowledge relating to mother to child transmission of HIV and transmission through breast feeding is low among the women in this study. Given the potential for sexual transmission of HIV from and among the IDUs and their regular sex partners in the South Asian region (Panda et al., 2000, 2005) and the possibility of onward transmission of HIV to the children it is important to enhance the knowledge relating to HIV acquisition and transmission in this population. For example, Manipur and Nagaland in northeast India are among the high prevalent HIV states in India where injecting drug use is the primary driver of the HIV epidemic and the antenatal HIV prevalence in both states is >1% (NACO, 2006a,b). Since a fourth of the women in the study are illiterate, it is important to provide the HIV transmission related information through face-to-face communication, role plays and street theatre in a simplified way by the peers.

Table 4

Factors associated with condom use during the last sexual intercourse amongst the regular female sex partners of drug users in South Asian countries of Bangladesh, Bhutan, India, Nepal and Sri Lanka

Characteristic	Condom use, last sexual act		OR and 95% CI*
	Yes	No	
Country			
Bangladesh	14	122	0.9 (0.5, 1.6)
India	717	2611	2.1 (1.6,2.7)
Nepal	152	265	4.3 (3.2, 5.9)
Sri Lanka (reference group)	83	625	
Age			
≤Median age 28years	564 (58%)	1771 (48.7%)	1.5 (1.3, 1.7)
>Median age	409 (42%)	1868(51.3%)	
Children			
≤1 child	518 (53.2%)	1382 (38%)	1.9 (1.6, 2.2)
>1 child	455 (46.8%)	2257 (62%)	
Education			
Illiterate	146 (15%)	1044 (28.7%)	0.4 (0.4, 0.5)
Literate	827 (85%)	2595 (71.3%)	
Employment			
Employed	488 (50.2%)	1369 (37.6%)	1.7 (1.4, 1.9)
Unemployed	485 (49.8%)	2270 (62.4%)	
Marital status			
Live-in partner	408 (41.9%)	802 (22%)	2.6 (2.2, 3)
Married	565 (58.1%)	2837 (88%)	
Money spent			
Only for family	287 (29.5%)	887 (24.4%)	1.3 (1.1,1.5)
For drug use	686 (70.5%)	2752 (75.6%)	
Age at first sex			
≤Median age 18 years	569 (58.5%)	2272 (62.4%)	0.9 (0.8, 0.98)
>Median age 18 years	404 (41.5%)	1367 (37.6%)	
Number of sex partners			
1 partner	526 (54.1%)	2854 (78.4%)	0.3 (0.3, 0.4)
>1 partner	447 (45.9%)	785(21.6%)	
Sex work			
Yes	249 (25.6%)	162 (4.5%)	7.4 (6,9.1)
No	724 (74.4%)	3477 (95.5%)	
Drug use, ever			
Yes	340 (34.9%)	655 (18%)	2.5 (2.1, 2.9)
No	633 (65.1%)	2984 (82%)	
Drug use before last sex			
Yes	338 (34.7%)	443 (12.2%)	3.8 (3.3,4.5)
No	635(65.3%)	3196(87.8%)	
Anal sex with regular partner			
Yes	149 (15.3%)	420 (11.5%)	1.4 (1.1,1.7)
No	824 (84.7%)	3219 (88.5%)	
White vaginal discharge			
Yes	368 (37.8%)	1188 (32.6%)	1.3 (1.1,1.5)
No	605 (62.2%)	2451 (67.4%)	
Genital ulcer			
Yes	151 (15.5%)	442 (12.1%)	1.3 (1.1, 1.6)
No	822 (84.5%)	3197 (87.9%)	
Burning urination			
Yes	327 (33.6%)	1055 (29%)	1.2 (1.1, 1.4)
No	646 (66.4%)	2584 (71%)	
Sought tratment			
Yes	325 (33.4%)	787 (21.6%)	1.8 (1.6,2.1)

Table 4 (Continued)

Characteristic	Condom use, last sexual act		OR and 95% CI*
	Yes	No	
No	648 (66.6%)	2852 (78.4%)	
Heard about HIV/AIDS			
Yes	919 (94.5%)	2548 (70%)	7.3 (5.5, 9.7)
No	54 (5.5%)	1091 (30%)	
Know HIV by appearance			
Yes	114 (11.7%)	263 (7.2%)	1.7 (1.4, 2.1)
No	859 (88.3%)	3376 (92.8%)	
Condom is protective			
Yes	741 (76.2%)	1567 (43.1%)	4.2 (3.6, 5)
No	232 (23.8%)	2072 (56.9%)	
Personal risk of getting HIV			
Yes	399 (41%)	727 (20%)	2.8 (2.4, 3.2)
No	574 (59%)	2912 (80%)	
Ever tested for HIV			
Yes	309 (31.8%)	473 (13%)	3.1 (2.6, 3.7)
No	664 (68.2%)	3166 (87%)	
Approached by someone to give information			
Yes	690 (70.9%)	1328 (36.5%)	4.2 (3.6, 4.9)
No	283 (29.1%)	2311 (63.5%)	

* OR, Odds ratio; CI, confidence interval.

Findings reveal that self reported symptoms indicative of sexually transmitted infections and reproductive tract infections like white vaginal discharge, genital ulcer and burning micturition were common. In a study on the regular sex partners of IDUs in Chennai (Panda et al., 2007) it was revealed that viral STIs were common and 38% of the female regular sex partners were infected with HSV-2. In the same study, trichomonas vaginalis in wet mount was detected in 5% of the women and 37% of the women had laboratory-confirmed bacterial vaginosis. Given the synergy between STI and HIV, it is important to identify these symptoms early and treat them

Table 5
Multiple Logistic Regression Model Examining Correlates of Condom Use at Most Recent Sexual Intercourse among the Regular Sex Partners of Drug Users in South Asian Countries of Bangladesh, Bhutan, India, Nepal and Sri Lanka

Variables	Adjusted OR	95% CI	P-value
Country			
India	1.8	(1.3, 2.4)	0.000
Nepal	3.4	(2.4, 4.9)	0.000
Illiterate	0.7	(0.6, 0.9)	0.012
Engaged in sex work	4	(3, 5.3)	0.000
Sex debut before ≤18 years	0.8	(0.7, 0.9)	0.008
One sex partner	0.6	(0.5, 0.7)	0.000
Drug use	2	(1.5, 2.6)	0.000
Drug use during last sex	2.5	(1.9, 3.3)	0.000
Treated for symptoms	1.3	(1, 1.6)	0.043
Heard HIV/AIDS	2.1	(1.5, 3)	0.000
Condom is protective	1.5	(1.2, 1.9)	0.000
Tested for HIV	1.5	(1.2, 1.8)	0.000
Approached by someone with information on HIV	1.7	(1.4, 2)	0.000

adequately. Since only a small proportion of female sex partners have been tested for HIV, urgent efforts are needed to scale-up HIV counselling and testing for them.

Just over a fifth of the participants (22%) in this study reported ever using drugs and 17% used drugs before the last sexual act. Nine percent of women in this study reported to be engaged in sex work. Anal sex was not uncommon with 12% of the total sample reporting anal sex with their partners. In a study by Gross et al. (2000), women reporting anal sex were more likely to have a male injecting drug use partner, history of STI in the past year and non-use of condom. It is important to study the drug use among the sex partners of drug users in South Asian settings as the literature on this is scanty. Studies from other parts of the world indicate that in many instances the women are likely to have been initiated to drug use by their drug-using spouses (el-Guebaly, 1995). Having a drug injecting love mate was associated with drug use in female sex workers in Vietnam (Tran, Detels, Long, & Lan, 2005). Moreover, the interface between drug use and sex work can fuel the HIV epidemic (Panda et al., 2001).

Despite having drug users/IDUs as their primary partners, only 21% of the female regular sex partners reported using a condom during their last sexual intercourse. Condoms continue to remain as the primary protective device against sexual exposure to HIV and hence it is important to understand the factors associated with condom use in order to plan effective responses to promote condoms amongst the female sex partners. The study identified a number of variables associated with condom use during the last sexual intercourse. Female sex partners who hailed from Nepal and India are more likely to use condoms. Condom use is low in Sri Lanka

as this is a low HIV prevalent country and moreover, injecting drug use has not diffused significantly in the country. On the other hand, Nepal and India are experiencing concentrated epidemics among the most-at-risk populations and condom promotion through free distribution or social marketing is being accorded the highest priority by the National AIDS Control Organizations in these two countries.

It is important to note that condom use is four times more likely among those engaged in sex work, twice more likely in women using drugs ever and two and a half times more likely in sex partners reporting drug consumption before the last sexual act. It is clear that the current HIV prevention efforts in South Asia are targeting the most at risk populations, in particular, those engaged in commercial sex. Among the regular sex partners of drug users, it is this subpopulation of women with risky practices who also engage in protected sex. In Bangladesh, compared with the non-sex worker female IDUs the sex worker female IDUs reported more use of condoms during the last sexual act (Azim et al., 2006).

Condom use is twice more likely in women who heard of HIV/AIDS and one and a half times more likely in regular sex partners who know that condoms are protective and those who have tested for HIV. It is evident that women who are aware of HIV/AIDS and protective efforts of condoms practice safer sex and this underscores the need to sustain and expand the existing prevention strategies that aim to enhance behaviour change communication. It is also important to scale-up HIV testing for the regular sex partners given its positive association with condom use as well as its other benefits.

We found that condom use was unlikely in women who reported sexual debut ≤ 18 years. Panda et al. (2007) in their study on the sexually transmitted infections and sexual practices in IDUs and their regular sex partners in Chennai, India found that female regular sex partners who had their first sex at age 17 years or less had two times the odds of having any STI. Women experiencing first sex at an earlier age seem vulnerable and this should be considered in planning responses targeting women. There was significant association between condom use during last sexual act and treatment seeking for self reported symptoms. In other words, condom use is associated with health seeking behaviour.

Women with only one sex partner are unlikely to use condoms. It is becoming increasingly apparent that women in stable relationships are at greater risk for HIV and STDs than previously thought (Gangakhedkar et al., 1997; Nagachinta et al., 1997) and one key reason for this is that condoms are used less frequently in more committed relationships (Baker, Morrison, Gillmore, & Schock, 1995). Mehendale et al. (2007) in a recent study on declining HIV incidence among patients attending the STI clinics in Pune, India observed that women not engaged in sex work reported a low rate of condom use with their husbands and this did not change over the 10 year study period. In view of this observation, the findings of our study highlight the need to protect the spouses and regular sex partners of high-risk men by focused efforts. In this study it was found that those who have been approached

by someone with information on HIV/AIDS are twice more likely to use condoms during the last sexual act and hence there is an urgent need to reach out to this group if targeted interventions have to contain the HIV infection from and among the IDUs and their regular sex partners. As pointed out earlier, one of the important steps is to include women staff in the outreach services and the female sex partners of drug users feel less stigmatised to discuss with women, who share their culture. It is desirable to increase the awareness of female sex partners on the benefits of condom use and risks of not using condoms in primary relationships. Specialised efforts are needed to increase the risk perception of the female partners of drug users. Given that illiteracy is negatively associated with condom use and that a fourth of the participants are illiterate, special efforts are required to develop appropriate prevention interventions targeting illiterate women. Apart from increasing the self efficacy of the female regular sex partners, it is also important to address the barriers for condom use like relationship dynamics (Kumar, 2004), stigma related to condom negotiation, condom use as linked to gender and sexual roles, condom use as inconvenient (Sri Krishnan et al., 2007). It is important to promote safer condom norms among drug users and their steady partners (van Empelen, Schaalma, Kok, & Jansen, 2001). Given the challenges such as cultural inhibition, power and stigma associated with safe condom negotiation with regular partners, additionally we need to focus on women controlled prevention devices such as female condoms. Future programmes should also focus on enhancing communication and negotiation skills through targeting individuals as well as couples (Sherman & Latkin, 2001). The priority is to design and implement individual, couple and group level interventions that address the barriers and ensure consistent condom use with their primary partners.

Limitations

The rapid assessment among the regular sex partners of the drug users was done on a non-random sample and the subjects were recruited through purposive sampling. As the study was focused only on opioid users in the South Asian region, the mapping ensured that a considerable proportion of the available drug users from the selected geographical areas were recruited for assessment. In total about a half of the male drug users' female regular sex partners were recruited for assessment. The study is cross sectional and hence no causal conclusions can be drawn about whether factors associated with condom use predict condom use longitudinally. Finally, since the data was obtained only through self reported behaviours, it could be biased and inaccurate.

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References

- Aceijas, C., Stimson, G. V., Hickman, M., & Rhodes, T. (2004). United Nations reference group on HIV/AIDS Prevention and Care among IDU in Developing and Transitional Countries. Global overview of injecting drug use and HIV infection among injecting drug users. *AIDS*, *18*(17), 2295–2303.
- Azim, T., Alam, M. S., Rahman, M., Sarker, M. S., Ahmed, G., Khan, M. R., et al. (2004). Impending concentrated HIV epidemic among injecting drug users in Central Bangladesh. *International Journal of STD and AIDS*, *15*(4), 280–282.
- Azim, T., Chowdhury, E. I., Reza, M., Ahmed, M., Uddin, M. T., Khan, R., et al. (2006). Vulnerability to HIV infection among sex worker and non-sex worker female injecting drug users in Dhaka, Bangladesh: Evidence from the baseline survey of a cohort study. *Harm Reduction Journal*, *3*, 33.
- Baker, S. A., Morrison, D. M., Gillmore, M. R., & Schock, M. D. (1995). Sexual behaviors, substance use, and condom use in a sexually transmitted disease clinic sample. *Journal of Sex Research*, *32*(1), 37–44.
- Chakrabarti, S., Panda, S., Chatterjee, A., Sarkar, S., Manna, B., Singh, N. B., et al. (2000). HIV-1 subtypes in injecting drug users & their non-injecting wives in Manipur, India. *Indian Journal Medical Research*, *111*, 189–194.
- Devi Kh, S., Brajachand, N., Singh, H. L., & Singh, Y. M. (2005). Co-infection by human immunodeficiency virus, hepatitis B and hepatitis C virus in injecting drug users. *Journal Communicable Diseases*, *37*, 73–77.
- Eicher, A. D., Crofts, N., Benjamin, S., Deutschmann, P., & Rodger, A. J. (2000). A certain fate: Spread of HIV among young injecting drug users in Manipur, north-east India. *AIDS Care*, *12*, 497–504.
- el-Guebaly, N. (1995). Alcohol and polysubstance abuse among women. *Canadian Journal of Psychiatry*, *40*(2), 73–79.
- Emmanuel, F., Akhtar, S., Attarad, A., & Kamran, C. (2004). HIV risk behavior and practices among heroin addicts in Lahore, Pakistan. *Southeast Asian Journal Tropical Medicine Public Health*, *35*(4), 940–948.
- Gangakhedkar, R. R., Bentley, M. E., Divekar, A. D., Gadkari, D., Mehendale, S. M., Shepherd, M. E., et al. (1997). Spread of HIV infection in married monogamous women in India. *JAMA*, *278*, 2090–2092.
- Go, V. F., Quan, V. M., Voytek, C., Celentano, D., & Nam le, V. (2006). Intra-couple communication dynamics of HIV risk behavior among injecting drug users and their sexual partners in Northern Vietnam. *Drug Alcohol Dependence*, *84*(1), 69–76.
- Gross, M., Holte, S. E., Marmor, M., Mwatha, A., Koblin, B. A., & Mayer, K. H. (2000). Anal sex among HIV-seronegative women at high risk of HIV exposure. The HIVNET Vaccine Preparedness Study 2 Protocol Team. *Journal of Acquired Immuno Deficiency Syndrome*, *1*;24(4), 393–398.
- Gupta, G. R. (2002). How men's power over women fuels the HIV epidemic. *British Medical Journal*, *324*, 183–184.
- Gyarmathy, V. A., Neaigus, A., Miller, M., Friedman, S. R., & Des Jarlais, D. C. (2002). Risk correlates of prevalent HIV, hepatitis B virus, and hepatitis C virus infections among noninjecting heroin users. *Journal of Acquired Immuno Deficiency Syndrome*, *1*; 30(4), 448–456.
- Haque, N., Zafar, T., Brahmabhatt, H., Imam, G., ul Hassan, S., & Strathee, S. A. (2006). High risk sexual behaviours among drug users in Pakistan: Implications for prevention of STDs and HIV/AIDS. *Journal of Pakistan Medical Association*, *56*(Suppl 1), S65–S72.
- Islam, S. K., Hossain, K. J., Kamal, M., & Ahsan, M. (2003). Prevalence of HIV infection in the drug addicts of Bangladesh: Drug habit, sexual practice and lifestyle. *International Journal STD AIDS*, *14*(11), 762–764.
- Kumar, M. S. (2004). Formative research leading to the development of an intervention to reduce the risk of sexual transmission of HIV and STIs among drug users and their female partners in Chennai, India, Research report submitted to HIV/STI Prevention and Care Research Programme. New Delhi: Population Council.
- Kumar, M. S., Mudaliar, S., Thyagarajan, S. P., Kumar, S., Selvanayagam, A., & Daniels, D. (2000). Rapid assessment and response to injecting drug use in Madras, south India. *International Journal Drug Policy*, *11*, 83–98.
- Mcgrath, J. W., Celentano, D. D., Chard, S. E., Fullem, A., Kanya, M., Gangakhedkar, R. R., et al. (2007). A group based intervention to increase condom use among HIV serodiscordant couples in India, Thailand, and Uganda. *AIDS Care*, *19*, 418–424.
- Mehendale, S. M., Paranjape, R. S., Brahme, R. G., Kohli, R., Joglekar, N., Godbole, S. G., et al. (2007). *Journal of Acquired Immuno Deficiency Syndrome*, 00:000-000.
- Nagachinta, T., Duerr, A., Suriyanon, V., Nantachit, N., Rugsao, S., Wanapirak, C., et al. (1997). Risk factors for HIV-1 transmission from HIVseropositive male blood donors to their regular female partners in northern Thailand. *AIDS*, *11*(14), 1765–1772.
- National AIDS Control Organization. (2006). HIV/AIDS Epidemiological Surveillance & Estimation Report for the year 2005. National AIDS Control Organisation, Ministry of Health and Family Welfare. Government of India, April 2006. <http://www.nacoonline.org/>.
- National AIDS Control Organization (NACO). (2006) Ministry of Health and Family Welfare, Government of India. HIV/AIDS epidemiological surveillance & estimation report for the year 2005. <http://www.naco.org.in>.
- National AIDS Control Organization (NACO). (2006) Ministry of Health and Family Welfare, Government of India. Annual sentinel surveillance report; sentinel site-wise report, August–October 1994–2005. New Delhi, India: NACO, Ministry of Health and Family Welfare, Government of India.
- Oelrichs, R. B., Shrestha, I. L., Anderson, D. A., & Deacon, N. J. (2000). The explosive human immunodeficiency virus type 1 epidemic among injecting drug users of Kathmandu, Nepal, is caused by a subtype C virus of restricted genetic diversity. *Journal of Virology*, *74*(3), 1149–1157.

- Panda, S., Chatterjee, A., Bhattacharjee, S., Ray, B., Saha, M. K., & Bhattacharya, S. K. (1998). HIV, hepatitis B and sexual practices in the street-recruited injecting drug users of Calcutta: Risk perception versus observed risks. *International Journal STD AIDS*, 9(4), 214–218.
- Panda, S., Chatterjee, A., Bhattacharya, S. K., Manna, B., Singh, P. N., Sarkar, S., et al. (2000). Transmission of HIV from injecting drug users to their wives in India. *International Journal STD AIDS*, 11, 468–473.
- Panda, S., Bijaya, L., Sadhana Devi, N., Foley, E., Chatterjee, A., Banerjee, D., et al. (2001). Interface between drug use and sex work in Manipur. *National Medical Journal of India*, 14, 209–211.
- Panda, S., Kumar, M. S., Lokabiraman, S., Jayashree, K., Satagopan, M. C., Solomon, S., et al. (2005). Risk factors for HIV infection in injection drug users and evidence for onward transmission of HIV to their sexual partners in Chennai, India. *Journal of Acquired Immuno Deficiency Syndrome*, 39, 9–15.
- Panda, S., Kumar, M. S., Saravanamurthy, P. S., Mahalingam, P., Vijayalakhshmi, A., Balakrishnan, P., et al. (2007). Sexually transmitted infections and sexual practices in injection drug users and their regular sex partners in Chennai, India. *Sexually Transmitted Diseases*, 34(4), 250–253.
- Peak, A., Rana, S., Maharjan, S. H., Jolley, D., & Crofts, N. (1995). Declining risk for HIV among injecting drug users in Kathmandu, Nepal: The impact of a harm-reduction programme. *AIDS*, 9, 1067–1070.
- Rahman, M., Zaman, M. S., Sekimoto, M., & Fukui, T. (2000). HIV-related risk behaviours among drug users in Bangladesh. *International Journal STD AIDS*, 11, 827–828.
- Rhodes, T., Stimson, G. V., & Quirk, A. (1996). Sex, drugs, intervention and research: From the individual to the social. *Substance Use and Misuse*, 31, 375–407.
- Saidel, T. J., Jarlais, D. D., Peerapatanapokin, W., Dorabjee, J., Singh, S., & Brown, T. (2003). Potential impact of HIV among IDUs on heterosexual transmission in Asian settings: Scenarios from the Asian Epidemic Model. *International Journal of Drug Policy*, 14, 63–74.
- Sharma, A. K., Aggarwal, O. P., & Dubey, K. K. (2002). Sexual behavior of drug-users: Is it different? *Preventive Medicine*, 34(5), 512–515.
- Sherman, S. G., & Latkin, C. A. (2001). Intimate relationship characteristics associated with condom use among drug users and their sex partners: A multilevel analysis. *Drug and Alcohol Dependence*, 64(1), 97–104.
- Sri Krishnan, A. K., Hendriksen, E., Vallabhaneni, S., Johnson, S. L., Ramnani, S., Kumarasamy, N., et al. (2007). Sexual behaviors of individuals with HIV living in South India: A qualitative study. *AIDS Education and Prevention*, 19(4), 334–345.
- Strathdee, S. A., & Sherman, S. G. (2003). The role of sexual transmission of HIV infection among injection and non-injection drug users. *Journal of Urban Health*, 80:iii7–iii14.
- Tran, T. N., Detels, R., Long, H. T., & Lan, H. P. (2005). Drug use among female sex workers in Hanoi, Vietnam. *Addiction*, 100(5), 619–625.
- UNAIDS. (2006). Country profile for Sri Lanka http://www.unaids.org/en/Regionas_Countries/Countries/sri_lanka.asp.
- United Nations Drug Control Programme, Regional Office for South Asia. (2002). Rapid Assessment Survey of Drug Abuse in India. M.S. Kumar (ed) United Nations Drug Control Programme, Regional Office for South Asia, New Delhi. <http://www.unodc.org/india/ras.html>.
- United Nations Office on Drugs and Crime Regional Office for South Asia. (2005). Introduction to 'HIV intervention tool-kit' and basics of conducting Situation and Response Assessment. <http://www.unodc.org/india/en/module1.html>.
- United Nations Office on Drugs and Crime Regional Office for South Asia (2005). South Asia—Regional Profile 2005. http://www.unodc.org/india/south_Asia_Regional_Profile_Sept_2005.html.
- van Empelen, P., Schaalma, H. P., Kok, G., & Jansen, M. W. (2001). Predicting condom use with casual and steady sex partners among drug users. *Health Education and Research*, 16, 293–305.