

## HIV Knowledge and Risk Behaviors Among Pakistani and Afghani Drug Users in Quetta, Pakistan

\*Tariq Zafar, †Heena Brahmhatt, \*Ghazanfar Imam, \*Salman ul Hassan, and  
†Steffanie A. Strathdee

†*Bloomberg School of Public Health, Johns Hopkins University, Baltimore, Maryland, U.S.A.; and* \**Nai Zindagi, Islamabad, Pakistan*

---

**Summary:** Situated on the Pakistan-Afghan border, Quetta is home to growing numbers of Afghan refugees. We studied HIV knowledge and risk behaviors among Pakistani and Afghani drug users between July 2001 and November 2001. Of 959 drug users, all were male and the majority used heroin. Most were Pakistani (84.8%), 14.9% were Afghani, and 0.3% were Iranian. Relative to Pakistani drug users, a higher proportion of Afghans reported no formal education, homelessness, and unemployment ( $p < .001$ ). Afghans were more likely to have used an opiate as their first illicit drug (16% vs. 7%,  $p < .001$ ), to have ever injected (18.8% vs. 12.3%,  $p = .04$ ), to report needle sharing (72.2% vs. 48.2%,  $p = .08$ ), or to report a drug user in their family ( $p = .08$ ). None of sexually active Afghans had ever used a condom compared with 5.0% of the Pakistanis ( $p = .01$ ). Only 4.3% of Afghans had ever heard of HIV/AIDS compared with 18.3% of Pakistanis ( $p < .001$ ). Extremely low levels of HIV/AIDS awareness and high HIV risk behaviors were evident among drug users in Quetta, among whom Afghans were especially vulnerable. Interventions to prevent transition to injection, needle exchange, and drug treatment are urgently required to prevent blood-borne infections. **Key Words:** HIV/AIDS—Injection drug use—Heroin—Afghanistan—Pakistan.

---

Explosive HIV epidemics associated with injection drug use have been documented in many parts of Asia (1–3), but HIV prevalence among injection drug users (IDUs) in Pakistan has been consistently low, usually ranging from 0% to 2% (4–6). Data on drug-using behaviors in this region are sparse, however and are required to inform prevention efforts.

Over 3 million heroin addicts are estimated to reside in Pakistan (5) due in part to its proximity to Afghanistan, one of the world's largest producers of heroin (3). Most drug users in Pakistan consume heroin by "chasing the dragon," whereby heroin is burned on a foil and the

fumes are inhaled. Since the late 1990s, a growing number of heroin users have begun injecting combinations of pharmaceuticals that are readily available from pharmacies without a prescription (5,7). This may increase their vulnerability to HIV and viral hepatitis as a consequence of sharing of needles and other injection paraphernalia.

Another important trend is the influx of over 5 million Afghan refugees who entered Pakistan following the Russian invasion of Afghanistan in the 1980s and, more recently, following the U.S. bombing campaign in 2001. This has generated socioeconomic upheaval and further strains on a health care system that has historically placed a low priority on HIV prevention (8). To date, however, little is known about HIV/AIDS awareness and associated risk behaviors among displaced Afghans.

We studied HIV risk behaviors and HIV/AIDS awareness among Pakistani and Afghani drug users in Quetta, Pakistan, situated near the Pakistan-Afghanistan border.

---

Address correspondence and reprint requests to Steffanie A. Strathdee, Department of Epidemiology, Bloomberg School of Public Health, Johns Hopkins University, 615 North Wolfe Street, Baltimore, MD 21205, U.S.A.; e-mail: sstrathd@jhsph.edu

Manuscript received May 21, 2002; accepted October 21, 2002.

These time-sensitive data will help to inform HIV prevention efforts among drug users in both Pakistan and Afghanistan.

## METHODS

### Setting

In early 2001, a nonprofit service agency called *Nai Zindagi* ("New Life") established a drop-in center in Quetta, the capital city of Balochistan (also spelled Baluchistan) province, which shares a porous border with Afghanistan and Iran. Quetta's inhabitants are of diverse ethnicities, including Pathans, Balochs, Brahvis, Afghans, Uzbeks, Tajiks, and Turkeman and nomadic tribesmen.

### Data Collection

Beginning in July 2001, new clients registering for drop-in services (e.g., referrals to drug treatment) were required to complete an interviewer-administered questionnaire on sociodemographics, current and past injection and noninjection drug use, sexual behaviors, and service needs as previously described (7). HIV/AIDS awareness was assessed by asking respondents if they had "ever heard of a disease called AIDS" and was not accompanied by prompting. Respondents were also asked if they believed that sharing needles could cause disease. Interviews were conducted in private by a trained staff member who was fluent in the local languages (e.g., Pashtoon, Urdu). The Johns Hopkins Committee on Human Research approved this study.

### Data Analysis

Descriptive statistics were used to describe the study sample and to compare drug users who reported being born in Afghanistan and Pakistan. Due to the small proportion of drug users reporting other nationalities (0.3%), these subjects were excluded, as were 3 persons who did not report a nationality. Therefore, results are presented for a total of 956 persons.  $\chi^2$  tests were used to compare dichotomous and categorical baseline data, whereas Wilcoxon rank sum tests were used to analyze continuous variables. Logistic regression was used to assess the association between Afghani versus Pakistani nationality and various HIV risk behaviors, adjusting for potential confounders using multivariate modeling.

## RESULTS

A total of 959 drug users registered for services between July and November 2001 and underwent the interviewer-administered survey. All were male, the median age was 35 years (interquartile range [IQR]): 27–42 years), and over half had received no formal education (Table 1). The majority were of Pakistani origin (84.8%), whereas the remainder were Afghani (14.9%) or Iranian (0.3%). One fifth were currently homeless, 46.7% were married, and 37.8% reported being currently employed. Common sources of employment were government jobs, daily wage jobs, driving, farming, and manual labor.

After excluding the 3 drug users of Iranian origin and comparing sociodemographic characteristics between Afghani ( $N = 143$ ) versus Pakistani drug users ( $N = 813$ ), there were no significant differences by gender, age, or marital status; however, significantly higher proportions of Afghani drug users reported no formal education (65.7% vs. 50.7%,  $p < .001$ ), homelessness (44.1% vs. 15.8%,  $p < .001$ ), unemployment (74.1% vs. 59.9%,  $p = .001$ ), and lower incomes ( $p < .001$ ).

Only 16% of respondents had heard of HIV/AIDS. HIV/AIDS awareness was much lower among Afghani than Pakistani drug users (4.3% vs. 18.3%,  $p < .0001$ ); Afghanis were also less likely to be aware that sharing needles could spread disease (11.2% vs. 24.7%,  $p < .001$ ).

Of the 824 (86.3%) persons who reported ever having sexual intercourse, only 4.3% reported ever using condoms. Among 120 Afghanis who reported having sex, none had ever used a condom. A total of 44.3% of respondents had ever had sex with a commercial sex worker, which was more common among Pakistani than Afghani drug users (46.1% vs. 35.0%,  $p = .01$ ).

In terms of drug use behaviors, the median daily amount spent on drugs was 100 rupees (Rs) (IQR: 50–100 Rs), which is roughly \$2 (data not shown). Almost all respondents (96.9%) reported using heroin through chasing the dragon, and 125 (13.2%) reported ever injecting drugs. Of these 125 persons, 75 (60%) reported currently injecting drugs and 55% shared needles. Only 20% reported cleaning used needles before using them, but in these cases, cleaning methods were almost always insufficient to inactivate blood-borne viruses (e.g., rinsing with water, wiping with rags).

Comparing Afghani versus Pakistani drug users, the former were significantly more likely to have ever injected drugs (18.8% vs. 12.3%,  $p = .04$ ), to report having used an opiate as their first illicit drug (16% vs. 7%,  $p < .001$ ), to report needle sharing (72.2% vs. 48.2%,  $p = .08$ ), or to report having a drug user in their family (8.4% vs. 4.2%,  $p = .08$ ). Similar proportions of Afghani and Pakistani drug users reported using a "street doctor" to help them inject, donating blood, or having received some form of drug treatment, which was almost exclusively detoxification.

In logistic regression models adjusting for sociodemographic variables (Table 2), Afghanis were more than 70% less likely to have heard of HIV/AIDS compared with Pakistanis (adjusted odds ratio [AOR] = 0.34; 95% CI: 0.12–0.99). After adjusting for these same factors, however, Afghanis were significantly less likely to report having ever had sex with a commercial sex worker compared with Pakistanis (AOR = 0.61; 95% CI: 0.37–0.99). Because none of the sexually active Afghanis re-

**TABLE 1.** Sociodemographic and behavioral characteristics among Afghani and Pakistani drug users in Quetta, Pakistan (N = 956)<sup>a</sup>

Characteristic	Total (N = 956)	Afghani (n = 143)	Pakistani (n = 813)	p value
Gender				
Male	956 (100.0)	143 (100.0)	813 (100.0)	—
Female	0	0	0	
Median age (IQR)	35 (27–42)	35 (26–41)	35 (27–42)	.53
Education				
None	504 (53.0)	94 (65.7)	408 (50.7)	.004
1–5 years	203 (21.4)	27 (18.9)	176 (21.9)	
5–10 years	133 (14.0)	14 (9.8)	119 (14.8)	
>10 years	111 (11.7)	8 (5.6)	102 (12.7)	
Currently homeless				
Yes	192 (20.1)	63 (44.1)	128 (15.8)	<.001
No	765 (79.9)	80 (55.9)	63 (44.1)	
Marital status				
Married	448 (46.7)	71 (49.7)	377 (46.4)	.43
Single	470 (49.0)	64 (44.8)	404 (49.7)	
Divorced/separated or widowed	41 (4.3)	8 (5.6)	32 (3.9)	
Currently employed				
Yes	362 (37.8)	37 (25.9)	325 (40.1)	<.001
No	595 (62.2)	106 (74.1)	486 (59.9)	
Median monthly income (IQR)	3,000 (2,000–4,000)	2,750 (2,000–3,000)	3,000 (2,400–4,000)	<.001
Ever arrested				
Yes	352 (36.8)	50 (35.0)	301 (37.2)	.62
No	604 (63.2)	93 (65.0)	509 (62.8)	
Present drug of choice				
Heroin	929 (96.9)	137 (95.8)	789 (97.1)	.58
Liquid pharmaceutical <sup>b</sup>	3 (0.3)	1 (0.7)	2 (0.3)	
Other	27 (2.82)	5 (3.5)	22 (2.7)	
Injects drugs				
Yes	125 (13.2)	26 (18.8)	99 (12.3)	.04
No	822 (86.8)	112 (81.2)	707 (87.7)	
Used an opiate (heroin or opium) as first drug				
Yes	79 (8.3)	21 (14.7)	57 (7.1)	.002
No	876 (91.7)	122 (85.3)	752 (93.0)	
Has drug user in family				
Yes	74 (7.7)	6 (4.2)	68 (8.4)	.08
No	885 (92.3)	137 (95.8)	745 (91.6)	
Ever in drug treatment				
Yes	440 (46.3)	46 (32.6)	394 (48.8)	<.001
No	511 (53.7)	95 (67.4)	413 (51.2)	
Ever heard of AIDS				
Yes	154 (16.1)	6 (4.3)	148 (18.3)	<.001
No	801 (83.9)	135 (95.7)	663 (81.8)	
Aware that sharing needles spreads infection				
Yes	216 (22.6)	16 (11.2)	200 (24.7)	<.001
No	740 (77.4)	127 (88.8)	610 (75.3)	
Ever used a condom <sup>b</sup>				
Yes	35 (4.3)	0 (0)	35 (5.0)	.01
No	785 (95.7)	120 (100.0)	664 (95.0)	
Ever had sex with a commercial sex worker <sup>b</sup>				
Yes	423 (51.3)	50 (41.7)	373 (53.1)	.02
No	401 (48.7)	70 (58.3)	330 (46.9)	
Ever donated blood while using drugs <sup>c</sup>				
Yes	12 (16.0)	4 (22.2)	8 (14.0)	.41
No	63 (84.0)	14 (77.8)	49 (86.0)	
Currently injects drugs				
Yes	75 (60.0)	18 (69.2)	57 (57.6)	.28
No	50 (40.0)	8 (30.8)	42 (42.4)	
Shares needles <sup>c</sup>				
Yes	59 (55.1)	13 (72.2)	27 (48.2)	.07
No	48 (44.9)	5 (27.8)	29 (51.8)	
Median # times re-using needle (IQR) <sup>c</sup>	2 (2–3)	2 (1–3)	2 (2–3)	.95
Cleans used syringe before use <sup>c</sup>				
Yes	86 (20.4)	16 (88.9)	45 (80.4)	.41
No	22 (20.4)	2 (11.1)	11 (19.6)	
Uses street doctor to help inject <sup>c</sup>				
Yes	10 (9.3)	2 (11.1)	6 (10.7)	.96
No	98 (90.7)	16 (88.9)	50 (89.3)	

<sup>a</sup> Numbers do not always total to 956 due to some missing data.

<sup>b</sup> Restricted to persons reporting ever having sex.

<sup>c</sup> Restricted to persons reporting current injection drug use.

IQR, interquartile range.

**TABLE 2.** Associations between Afghani versus Pakistani nationality and HIV risk factors in univariate and multivariate logistic regression models

HIV risk behavior	Crude odds ratio (95% CI)	Adjusted odds ratio <sup>a</sup> (95% CI)
Ever heard of HIV/AIDS	0.20 (0.09–0.46)	0.34 (0.12–0.99)
Currently injected drugs	1.66 (0.66–4.17)	0.66 (0.18–2.44)
Opiate used as first illicit drug	2.27 (1.33–3.88)	1.97 (0.97–4.00)
Ever had sex with a commercial sex workers	0.63 (0.43–0.94)	0.61 (0.37–0.99)
Ever donated blood while using drugs <sup>b</sup>	0.88 (0.52–1.51)	—

<sup>a</sup> Simultaneously adjusting for education, homelessness and unemployment, and income.

<sup>b</sup> Restricted to persons reporting ever injecting drugs (*N* = 125).

ported ever having used condoms, it was not possible to explore correlates of condom use. Afghanis were no more likely than Pakistanis to report injecting drugs after adjusting for potential confounders.

To explore potential risk behavior differences by more specific places of origin, we conducted a subgroup analysis on Pakistani respondents. Sufficient power was available to compare four groups: Balochis, Pathans, Punjabis, and those of other ethnic groups. Compared with the other subgroups, a higher proportion of Punjabis and those of other ethnic groups were homeless or had heard about HIV/AIDS (*p* < .001), whereas Balochis were more likely to have used an opiate as their first illicit drug. No clear patterns or other statistically significant differences emerged when comparing these groups according to other risk behaviors.

**DISCUSSION**

Our study of Afghani and Pakistani drug users in Quetta revealed extremely low levels of HIV/AIDS awareness coupled with high levels of behaviors that increase the likelihood of acquiring HIV and other blood-borne and sexually transmitted infections (STIs). These findings have important implications for the development of HIV/AIDS prevention programs in both Pakistan and Afghanistan.

Compared with Pakistanis, Afghani drug users were nearly three times less likely to have heard of HIV/AIDS. Only 4% of Afghanis had heard of HIV/AIDS, and none of those who reported having sexual intercourse had ever used condoms. These findings are disturbing but are not altogether unexpected. Under the Taliban rule, religious extremism in Afghanistan predominated and teachings related to sexuality were prohibited. Furthermore, overall education levels in the country have been significantly

lowered over two decades of war and political turmoil. Sixty-five percent of Afghanis have no access to health services (9).

The displacement of millions of Afghanis who left their homeland has increased their risk of malnutrition, HIV, STIs, and other diseases that accompany crowding and poor sanitation such as tuberculosis and cholera (10). Compared with Pakistani drug users, significantly higher proportions of Afghanis were homeless and many had no form of income. After adjusting for sociodemographic differences between Afghanis and Pakistanis, the former were less likely to have had sex with commercial sex workers compared with Pakistanis, which may have been due to social marginalization. Nevertheless, 41% of Afghani drug users reported having had sex with a commercial sex worker, as did over half of Pakistani drug users. The low rates of condom use we observed suggest a high risk of acquiring STIs. Interventions to increase condom use are clearly warranted among these populations, especially in light of recent concerns that some Afghani women and children who have recently fled to Pakistan may seek out or be forced into transactional or “survival sex” (11).

Opiate dependence may also serve to increase vulnerability to HIV and other blood-borne infections among displaced Afghanis. Compared with Pakistani drug users, Afghanis were more likely to have used an opiate as their first illicit drug or to report a drug user in their family and were marginally more likely to inject drugs or share needles. Afghanis were also less likely to be aware that sharing needles could spread disease. Because many Afghanis have been dependent on opium cultivation for their livelihood, it is not surprising that opium and heroin are their first drugs of abuse. Although Afghanistan’s new government has pledged to uphold a ban on opium cultivation, it is unclear whether these efforts will be successful (11).

The relatively low prevalence of injection drug use, however, indicates that interventions to prevent transitions to injection are urgently needed. Among injectors, access to sterile syringes through needle exchange programs and pharmacies and expanded access to drug treatment are paramount. During the study period, Lahore was the only city in Pakistan that offered needle exchange program services, and opiate substitution programs are entirely lacking in the country.

Although HIV prevalence in Pakistan has remained low, this could soon change. In addition to the high-risk behaviors reported here, 16% of IDUs reported donating blood. In a study by Luby et al. (12), over 50% of blood banks in Pakistan provided monetary reimbursements to blood donors. Blood bank practices such as exclusion of

high-risk donors and screening for blood-borne diseases were considered to fall far short of WHO standards. Improvements in blood screening practices are needed immediately to ensure the safety of the blood supply. Similar concerns have been raised about the safety of the blood supply in Afghanistan (11,13). Others have pointed out that displacement of persons due to war, famine, drought, and deportation may inadvertently increase vulnerability to HIV and other blood-borne infections and STIs (11,14).

Our study was limited by a relatively small number of Afghans, among whom it was not possible to determine the length of time they had lived in Pakistan. Because our study was a convenience sample based on drug users who registered for services offered by a nongovernmental organizations (NGO), caution should be exercised in generalizing our results to other populations. Socially desirable responding may have led some persons to underreport stigmatized behaviors such as injection drug use and paying for sex. Nevertheless, the high prevalence of these risk behaviors is a warning sign of a looming HIV epidemic that could be forthcoming in this region if action to implement prevention programs and structural interventions is not undertaken immediately.

#### REFERENCES

1. Crofts N, Reid G, Deany P. Injecting drug use and HIV infection in Asia. *AIDS* 1998;12(Suppl B):S69-78.
2. Stimson GV. Reconstruction of the subregional diffusion of HIV infection among injecting drug users in south-east Asia. *AIDS* 1994;8:1630-2.
3. Reid G, Crofts N. Afghanistan. In *Revisiting the hidden epidemic: a situation assessment of drug use in Asia in the context of HIV/AIDS*. Australia: The Center for Harm Reduction and The Burnet Institute, 2002:20-6. Available at: <http://www.chr.asn.au>.
4. Baqi S, Nabi N, Syed HN, et al. HIV antibody seroprevalence and associated risk factors in sex workers, drug users, and prisoners in Sindh, Pakistan. *J Acquir Immune Defic Syndr Hum Retrovirol* 1998;18:73-9.
5. United Nations Office for Drug Control and Crime Prevention and UNAIDS. *Baseline study of the relationship between injecting drug use, HIV and hepatitis C among male injecting drug users in Lahore: 1999*.
6. Khawaja ZA, Gibney L, Ahmed AJ, et al. HIV/AIDS and its risk factors in Pakistan. *AIDS* 1997;11:843-8.
7. Zafar T, ul Hasan S. A sociodemographic and behavioral profile of heroin users and the risk environment in Quetta, Pakistan. *Int J Drug Policy* 2002;13:121-5.
8. Khan OA, Hyder AA. Responses to an emerging threat: HIV/AIDS policy in Pakistan. *AIDS* 1997;11:843-8.
9. Ahmad K. WHO and humanitarian aid groups take first steps to rebuild Afghanistan. *Lancet* 2001;358:1884.
10. Ahmad K. Aid agencies withdraw staff from Afghanistan as refugees flee to the border. *Lancet* 2001;358:943.
11. Hankins C, Friedman SR, Zafar T, et al. Transmission and prevention of HIV and STD in war settings: implications of the war in Afghanistan. *AIDS* 2002;16:2245-52.
12. Luby SP, Khanani R, Zia M, et al. Evaluation of blood bank practices in Karachi, Pakistan, and the government's response. *Health Policy Plan* 2000;15:217-22.
13. Dupire B, Abawi AK, Ganteaume, et al. Establishment of a blood transfusion center at Kabul, Afghanistan. *Sante* 1999;9:18-22.
14. Shah SA, Khan OA, Kristensen S, et al. HIV-infected workers deported from the Gulf States: impact on Southern Pakistan. *Int J STD AIDS* 1999;10:812-4.