HIV/AIDS and its risk factors in Pakistan

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Introduction

Pakistan currently reports a low prevalence of HIV/AIDS. The fear of an expanded HIV epidemic is primarily due to segments of the Pakistani population engaging in high-risk practices, a low level of public knowledge about HIV/AIDS, and dangerous blood transfusion and inoculation practices. An additional concern is Pakistan's geographic proximity to India, a country that has experienced a rapid rise of HIV/AIDS (by the end of 1994 the World Health Organization (WHO) estimated that there were 1 750 000 cases of HIV in India) [1]. Sexual contacts between Pakistanis and Indians, as well as nationals of other countries with HIV epidemics, may be points of entry for HIV into Pakistan.

This review presents the limited data currently available on HIV/AIDS prevalence in Pakistan, and reviews both the formally and informally published literature that discusses risk factors for HIV-transmission in Pakistan.

Prevalence data on HIV/AIDS in Pakistan

By November 1996, 64 cases of AIDS had been reported to Pakistan's National AIDS Program. However, the WHO estimated that by the end of 1994 there were actually 40 000 HIV-infected cases when under-diagnosis, under-reporting and delays in reporting HIV were considered [1]. At present there is no effective active surveillance system for either HIV or AIDS in Pakistan. Most of the information comes from point-prevalence surveys conducted on blood donors at hospitals and on small numbers of individuals engaged in high-risk behaviour. Brief synopses of the results of the various point-prevalence studies are presented in Table 1; only those studies using a Western blot confirmatory test are included.

The data from these point-prevalence studies suggest that foreign and Pakistani nationals who have either worked abroad (in the Gulf states or elsewhere) or have worked as seafarers may make up a sizeable portion of the recognized HIV/AIDS cases. The studies also documented cases of HIV infection among individuals with multiple sexual partners, blood transfusion recipients, and prisoners. The infections observed in these individuals may be due to sexual contacts (heterosexual or homosexual), to injecting drug use, or to receipt of contaminated blood or blood products. Although heterosexual contact appears to be the dominant mode of transmission, the paucity of epidemiological research precludes any definitive statement on this issue.

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Table 1. HIV seroprevalence surveys from Pakistan.

Author/reference	Sample size / place	Sample composition	No. HIV-positive cases	Risk factors
Mujeeb *et al.,* 1988 [14]	1363 / Karachi	Blood donors or blood recipients at Jinnah Post Medical Center in 1986–1987	2 (married females)	Multiple blood transfusions
Khanani *et al.,* 1988 [15]	230 / Karachi	Blood donors and drug users who had never travelled abroad	4 [3 were in the same family (husband, wife, infant)]	Husband drug user with a history of bisexuality, Fourth case had history of promiscuity
Khanani *et al.,* 1990 [40]	413 / Karachi	Blood donors and recipients, drug users, suspected clinical cases of HIV	3 (2 were foreign nationals)	Unreported
Mujeeb *et al.,* 1991 [17]	1655 / Karachi	Blood donors at Jinnah Postgraduate Medical Center from 1987–1989	0	Unreported
Mujeeb *et al.,* 1993 [18]	2776 / Karachi	Several high and low risk groups	8 (all from high risk groups)	3 were prisoners, 2 sexually promiscuous, 2 seafarers, 1 blood recipient
Tariq *et al.,* 1993 [19]	54 170 / Nationwide	Mostly blood donors, miscellaneous others included Pakistani nationals deported from Gulf states, from 1987–1993	30 (27 acquired HIV abroad, mostly while working in the Gulf states)	Sexual contact with high risk persons, mostly heterosexual, 3 homosexual contacts, 4 bisexual contacts
Kayani *et al.,* 1994 [20]	48 000 approximately / Nationwide	Blood donors and people who were screened for emigration: 145 were also expatriates or Pakistanis who had lived abroad	36 (30 males and 6 females. 15 were expatriates or Pakistanis who had lived abroad)	Having lived abroad, received blood transfusions, presumed high-risk sexual contacts
S. Baqi, personal communication, 1995	479 / Karachi	Injecting drug users in rehabilitation centres; people arrested for drug-related crimes	0	Injecting drug use with potential needle sharing and high-risk sexual exposures
S. Pervaiz, personal communication, 1996	113 / Karachi	Injecting drug users	2	Sharing needles

Lifestyle risk factors for HIV transmission

Pakistan has high rates of internal and external migration. Most of the internal migrants (from rural to urban areas) are either unmarried men or married men who live in the cities apart from their wives and children who continue to live in rural areas. These migrants include truck and bus drivers who traverse the country and are typically away from their homes for long periods (often 50–51 weeks per year). External migration refers to Pakistani men going to work in the Gulf states and elsewhere, or working as seafarers. The primary motivation for both internal and external migration is a lack of stable employment opportunities at home.

These migrant workers are at risk for HIV/AIDS, as they are apart from their wives for long periods of time, and thus apt to engage in casual sexual relations with commercial sex workers and/or other partners (female or male). Wives are at risk of contracting HIV when the infected men return home. In a study of 40 truck drivers attending a sexually-transmitted disease (STD) clinic in Karachi, 40% of them reported sexual contact with female commercial sex workers and 90% of these had sexual contacts with more than one female sexual worker. In addition, 53% reported multiple homosexual contacts. Truck drivers have male helpers or 'cleaners' travelling with them in their truck who may, in addition, be expected to have sex with the driver (A.J. Ahmed, personal communication, 1995).

Point-prevalence data indicate that a substantial number of the HIV infections in Pakistan have occurred among men who have worked abroad. In some instances men have been deported by Persian Gulf states because they tested HIV-positive, although upon their return to

Pakistan some were re-tested and found to be HIV-negative. The studies presented in Table 1 suggest the role of migration in HIV-infection.

There is a great dearth of information on commercial sex work, which is illegal in Pakistan. However, it is clear that some Pakistani men frequent commercial sex workers. Large cities including Karachi and Lahore have famous red-light areas which traders, truck drivers, seafarers and visitors from other parts of the country visit [3]. Some of this commercial sexual activity occurs within 'dance houses' where some dancing and singing as performance art occurs, but where increasingly, the dancing is simply a preliminary activity to paid sex or a cover for these houses to operate [4].

In addition to commercial sex within Pakistan, it is reported that when Pakistani men travel to other parts of Asia, such as Bangkok and Bombay (now called Mumbai), they often have paid sexual encounters [5]. Seafarers from cargo ships travelling between Karachi, a major Pakistani seaport, and Bombay, India have sexual contacts with commercial sex workers in both India and Pakistan. Given that the proportion of Bombay commercial sex workers infected with HIV was estimated at 45% in 1993 [6], Pakistani seafarers may be at a high risk of acquiring the virus and subsequently transmitting it to partners in Pakistan.

The risk of sexual transmission of HIV is augmented by the rarity of condom use. Although Pakistan has one of the highest population growth rates in the world (2.9%), Pakistan's successive governments have discouraged publicity campaigns to raise awareness about contraception. As a consequence, the last contraceptive prevalence survey, carried out in 1985–1986, reported that only 9% of women of reproductive age used any form of contraception [7]. Hence, the use of barrier methods in sexual intercourse, including condoms, is unfamiliar to the vast majority of the population.

Unprotected sexual encounters occur in both heterosexual and homosexual contacts. Little information is available on men having sex with men in Pakistan, but anecdotal accounts and newsletter articles suggest that males having sex with males takes the form of adolescent boys having sexual contacts with each other, adolescent boys having sex with older men, and married men having male sexual companions in addition to having a wife. In some instances, the male companion may be a transvestite who is a commercial sex worker. In the North West Frontier Province (NWFP), there reportedly exists a cultural tolerance for males having sex with males [8]. As elsewhere in the world, incarcerated prisoners engage in sex with other males. In a survey exploring the sexual behavior of 3392 prisoners in Sindh province in south-east Pakistan, 120 prisoners (4%) reported sexual intercourse with men, while 523 (15%) acknowledged bisexual promiscuity (A.J. Khan, personal communication, 1994).

Injecting drug users are at risk for parenteral transmission. They may also be at increased risk for sexual transmission, as some drugs can lower inhibitions resulting in high-risk sexual encounters. A 1993 survey of illicit drug use estimated that there were over three million drug users in Pakistan and that drug use was increasing by 7% a year (Summary report of National Survey on Drug Abuse in Pakistan by the Integrated Drug Demand Reduction Project, unpublished data, 1993). Drug use is reported to be common in large cities. Heroin accounts for half of drug use, followed by hashish with 30% of users. Importation through the frontier regions of NWFP and Afghanistan is a major source of illicit drugs [9].

Injecting drug use is apparently uncommon and drugs are generally inhaled or ingested. However, it has been suggested that heroin addicts are beginning to use injections more often, particularly in Karachi. In 1994, the Department of Community Health Services at the Aga Khan University conducted a survey among drug users in Karachi. The subjects included 149 male drug users from a publicly funded drug rehabilitation centre, and 272 drug users who had been arrested for drug-related crimes. Among the 202 individuals in the drug rehabilitation centres, 58 (29%) admitted a history of parenteral drug use. Of the 272 individuals who were arrested for drug-related crimes, 62 (23%) acknowledged injecting drug use. No individual in the study was HIV-positive. However, sexual transmission of disease had occurred in some of the individuals and 17 (8.4%) of those in drug rehabilitation centres and 19 (7%) of those arrested for drug-related crimes were found to be Venereal Disease Research Laboratory test-reactive for syphilis [10].

The risks inherent in the lifestyles discussed above are magnified by the generally low level of knowledge within the population about HIV/AIDS and modes of transmission. Few surveys or studies have been conducted to explore Pakistanis' knowledge of, and attitudes towards, HIV and AIDS. The few published studies, focusing on high risk groups such as commercial sex workers, drug addicts, prisoners, truck drivers and blood recipients, indicate a generally low level of knowledge, as shown in Table 2.

One reason for the low level of knowledge reported in these studies is that, as a conservative Muslim society, Pakistan has certain social and cultural barriers to discussing and addressing the problems pertaining to sexuality or STD, including HIV/AIDS. The reticence of the government and the mass media to address these issues publicly has been an impediment to increasing the population's knowledge of HIV/AIDS. It was not

Table 2. Sources of knowledge, attitude and practices in Pakistan.

Author/reference	Sample size and composition	Knowledge of HIV/AIDS and condoms	Major source of knowledge
A.J. Khan, personal communication, 1994	4700 / Male prisoners	68% never heard of AIDS; 45% not familiar with condoms; 10% knew condoms protected from AIDS	Newspapers, television, radio and fellow inmates
S. Baqi, personal communication, 1995	202 / Drug users	60% had heard of AIDS; 96% had heard of condoms; 50% knew that transmission occurs through sexual contact and through sharing needles	Pakistani television programmes
Pakistan AIDS Prevention Society 1992 [21]	244 / Dancing girls (usually engaged in commercial sex work) and their male clients	75% were unaware that sexual contact was a mode of transmission	Unknown
Pakistan AIDS Prevention Society 1992–1993 [22]	250 / Pakistanis travelling abroad at the Karachi airport	Low level of knowledge, and prevalence of misconceptions about how AIDS is spread	Unknown

until August 1993 that the government of Pakistan lifted an official ban on the use of television and radio for AIDS education and information. As a result, the first advertisement for condoms on television and in newspapers appeared in March 1994 [11].

Healthcare practices contributing to the risk of HIV transmission

Several aspects of healthcare practices in Pakistan could contribute to the spread of HIV. One such practice is the unsafe use of needles in both the formal and non-formal healthcare sectors (i.e., in professional medical settings and in therapeutic settings where the healthcare provider is a non-certified traditional healer and/or drug dispenser). In many hospitals and clinics there are frequent shortages of disposable or sterilized needles and syringes, leading to unsafe needle-use practices. In a study of the needle use practices of 18 general practitioners working in a periurban settlement near Karachi, it was reported that all the interviewed general practitioners were observed administering injections using contaminated needles and syringes (S. Delawala personal communication, 1995).

Furthermore, injections are routinely given to patients in Pakistan whether required or not. In the study by Delawala *et al.* cited above, 94% of the general practitioners reported that patients attending their clinics insisted on receiving an injection, and a majority of all patients seen in their clinics were treated by injections. A majority of doctors reported that their patients preferred injections over oral medications, even when both modes of therapy were equally effective.

In a separate study of 204 patients visiting general practitioners in a periurban area of Karachi, only 34.8% of the patients stated that they insisted on receiving injections when visiting a general practitioner, suggesting that the general practitioners themselves may be predisposed to using injections. In reality, it is likely that both patient and practitioner preferences are responsible for the excessive use of needles. Of the 204 patients in this study, 81.7% reported receiving an injection on the initial visit, and 75.5% had received more the 10 injections in the past year. These injections were given commonly for non-specific complaints such as fever, abdominal pain and weakness (S. Ubaid, personal communication, 1995).

One consequence of such needle practices has been the transmission of hepatitis C infection. A study in the rural market town of Hafizabad in Punjab district found that healthcare providers' injections have been the catalyst driving the epidemic of hepatitis C infection. Indeed, such injections were the only risk factor associated with HCV infection (O. Pasha, personal communication 1995). This suggests the potential in Pakistan for transmission of HIV by the use of contaminated needles.

Blood transfusion is another potential avenue of HIV infection since screening of blood is not practised by most blood banks and hospitals. A survey from a study in progress on blood transfusion practices indicates that only 5–10% of the total blood transfusions in government hospitals are properly screened, and in private hospitals conditions are even more discouraging [12]. Legislation was approved by the national assembly in September 1994 for setting up a national blood transfusion authority to provide compulsory screening of blood for HIV. However, only a small number of teaching hospitals have the facilities to screen blood for

the HIV virus and even in these referral hospitals, HIV blood screening is limited by the inadequate supply of HIV testing kits.

The use in private blood banks of paid blood donors who give blood repeatedly, is an additional risk factor, as some of these donors are drug addicts [13]. A number of studies have found cases of Pakistanis who appear to have been HIV-infected through blood transfusions (Table 1). The risk of acquiring HIV through blood transfusions is heightened by the excessive use of transfusion in Pakistan. Blood transfusions are reportedly a popular form of treatment, frequently given by physicians in cases where they are not medically indicated because they are thought to energize people [13].

An additional medical practice that may contribute to the spread of HIV is the inadequate treatment of STDs. The scientific evidence is now quite conclusive that STDs are a co-factor for transmission of HIV [14,15]. This makes the early effective treatment of STDs an important component in HIV prevention. Unfortunately, Pakistan has few facilities for the treatment of STDs, and general practitioners lack training in STD management. STDs are addressed in a cursory fashion in the curriculum of the medical colleges. The few existing clinics that offer STD treatment services are located at the main teaching hospitals. It is thought that people commonly go to alternative service providers in the non-formal healthcare sector to treat STD. However, no research has been carried out to determine the extent of this practice, nor on the STD diagnostic and treatment methods of these healers. Indeed, there is a dearth of information even on STD services in the formal healthcare system.

Conclusion

There is an assumption on the part of many that the residents of Pakistan will be protected from HIV because they belong to an Islamic society with traditional, conservative behavioral mores. The prohibitions in Islam against sex outside marriage (pre-marital or extra-marital sex) and against homosexuality are perceived as effective defences against HIV by many political, educational, and religious leaders in Pakistan. Although some features of Pakistani society may indeed slow HIV transmission, such as the near-universal practice of male circumcision, high-risk behavior is prevalent in Pakistan suggesting that complacency is inappropriate.

Public and governmental recognition of the threat of an HIV epidemic in Pakistan is recent and the implementation of prevention and education programmes pertaining to HIV/AIDS is lagging.

With the WHO providing assistance, the government has funded an AIDS budget of a little more than 700 million rupees for 1995–1997 (US$ 2 million) and has adopted a strategic plan for 1994–1998. Yet national efforts remain modest, in contrast to the more vigorous regional efforts such as those in Sindh province by the Karachi, HIV/AIDS Working Group, the Pakistan AIDS Prevention Society, and the Government of Sindh.

A specific set of priorities for improvements include: upgrading HIV, AIDS and STD surveillance; improving confidentiality provisions for infected persons; the substantial expansion of training for STD diagnosis and treatment; targeted programmes for the highest-risk population, such as commercial sex workers and truck drivers; exploration of the potential of mass-marketing methods of condom promotion such as social marketing; improved blood bank, transfusion, and parenteral needle use practices; confidential screening programmes for Pakistanis returning from long-term overseas stays in the Persian Gulf region and elsewhere; and the careful evaluation of existing programmes in a cultural context to provide insights for future programme development and improvement.

The fact that there is currently a low prevalence of HIV/AIDS in Pakistan should be interpreted as an important opportunity to mitigate a potentially devastating public health scourge. The status of being a low-prevalence but high-risk country for HIV makes it critical that practical research and HIV-prevention efforts targeted at high-risk groups be implemented immediately. By effectively reaching high-risk groups at this early stage in the epidemic, Pakistan may be able to avoid the need to implement mass population-based HIV prevention (and treatment) programmes at a later data. This is likely to be the most cost-effective approach to HIV prevention for, as noted in a 1994 report by the Bangladeshi National AIDS Committee, the cost-effectiveness of interventions drops sharply when the infection moves from the 'high-risk, high-transmission core groups' to the general population. Both the potentially greater-effectiveness of early interventions, and the savings that the society may realize as a result, should incite governmental and non-governmental organizations to increase their HIV-prevention efforts now.

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