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THE HIV EPIDEMIC IN PAKISTAN

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Abstract

HIV is a virus that attacks the immune system, our body's natural defence against illness. Pakistan's HIV epidemic is fully established and expanding among injection drug users (IDUs) of whom 20% are infected with HIV. Inceptive epidemics are seen in several cities among Male sex workers and transgenders who made sexual contacts of IDUs. With participation of sex workers, Pakistan roll out to be following the "Asian Epidemic Model". On the other hand, nearly all patients in HIV clinics are emigrant workers and their immediate relations. Almost all principle population subgroups have at least some cases of HIV in most cities. While internationally known risk of HIV transmission are present among sex workers, IDUs, a sub-group of men from the general population and other groups, epidemics among male sex workers have introduced those among female sex workers suggesting local modulations in sex behaviors. Universal male circumcision and limited contact between sex workers and IDUs may have reduced the initial progress of the epidemic thus far although that will change as the numbers of HIV infected IDUs and their sexual contacts grows. The government runs HIV prevention programs for IDUs and sex workers in many cities, but must enhance the levels of coverage and quality of services provided. The slow early progression has provided a window of opportunity; it must not be allowed to close.

Key words: *HIV, AIDS, Transmission of HIV, Epidemic of HIV.*

Introduction:

HIV is a retrovirus that targets and alters the immune system (particularly immune cells known as CD4 cells), increasing the risk and impact of other infections and diseases (UNAIDS, 2011). Pakistan recently reports a highly expanded risk factors of HIV/AIDS. The threat of an expanded HIV epidemic is initially due to segments of Pakistani population enganging in high-risk activities, a low level of public knowledge regarding HIV/AIDS, dangerous blood transfusion and inoculation practices. (Gibney A. et al., 1997.)

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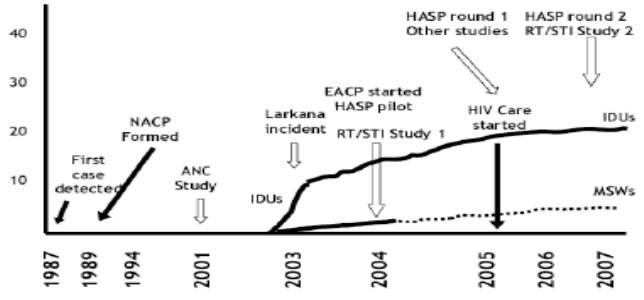
Recent demographic data reveal that HIVepidemic in Pakistan is well established and expanding among Injection Drug Users (IDUs) and their sexual contacts with male and transgender sex workers (MSWs). Ensconced individual, injection drug users (IDUs),

sexual risk behaviours, poverty, economic instability, pervasive stigma, low HIV awareness, illiteracy, internal and external labour migration, unprotected border exposures and infect and increasing number of people with HIV. (Adnan A. Khan and Khan A., 2010.) An additional factor of HIV expansion is geographic concerns of Pakistan with India, a county with that has experienced a rapid rise of HIV/AIDS (at the end of 1994, WHO estimated that 1,750,000 cases of HIV in India). Sexual contacts between Pakistanis and Indians and nationals of other countries, may be the points of entrance of HIV into Pakistan. Since 1987, over 4000 cases have been reported to the National AIDS Control Program (NACP), Ministry of Health. The national and international institutes (NACP, WHO, and UNAIDS) estimate that there maybe 80,000 individuals with HIV, whereas actual data reveals no such figures. (Burki T. et al., 2008.) Untill an outbreak among indentured IDUs in Larkana in 2003, there was short evidence of epidemic transfusion of HIV in country. (Memon A., 2004.)

National surveillance has since found uplifting HIV prevelance among IDUs and male sex workes (MSWs) in several cities, however female sex workers (FSWs) and general population remain mainly uneffected by the epidemic. This review describes the risks, prevelance and transfusion potential of HIV among various population subgroups and national response to epidemic in Pakistan.



NACP: The National AIDS Control Program of Pakistan (Ministry of Health).
ANC Study: The Antenatal Clinic Study (2001).
EACP: The Enhanced AIDS Control Program of Pakistan.
HASP: The HIV/AIDS Surveillance Project.
RT/STI Study: The National Study of Reproductive Tract and Sexually Transmitted Infections (2004).
IDUs: Injeciton Drug Users.
MSWs: Male Sex Workers.

Figure: Timeline of HIV in Pakistan.

(Adnan A. Khan and Khan A., 2010)

Injection Drug Users (IDUs):

There are an approximated 6,50,000 problem drug users and 80,000—1,45,000 IDUs countrywide. Much of the knowledge about IDUs concerns to male, street-based users; very short is known home-based or female users. Until 2003, many surveys had revealed high risk but no HIV among IDUs. (Akhtar S. et al., 2004.) Since then, HIV prevalence has trustworthy increased among IDUs, with the national average around 20% in surveyed cities. (Altaf A. et al., 2004.)

IDUs often inject in groups of 5-10 or more and syringe sharing varies from 3% to 65% between cities, with younger IDUs more likely to share. The usual injection frequency is about 2-3 injections daily but the use with heroin is high. Almost half (46%) of the IDUs report sexual activity with regular non-commercial female partners in the previous half of the year and only 10% use condoms. Many (27%) of IDUs report commercial sex with female sex worker (FSW) and 13% with male sex worker (MSW) in the last 6 months; 20% ever used condoms.

Street-based injecting in large groups has to be credible contributed to the rapid increase in HIV prevalence among IDUs. Their sex with commercial and non-commercial collaborators and use of informal health sector, where non-sterile therapeutic injections are common, may feasibly roll out the infection to the general population. (Akhtar S. et al., 2005.)

Sex Workers:

Sex work has a broad tradition in Pakistan. Over the previous 3 decades, this has transitioned from a predominantly brothel based sex-work culture to a diverse and dispersal pattern where women, men and transgenders (Hijras) sell sex. MSWs, Hijras and a third of all FSWs operate in public places (i.e parks and streets) ; the remaining FSWs operate out of homes. Only 3% work in brothels. (Balochistan AIDS Control Program, 2007)

The sex workers range from full time FSWs to mobile phone accessible, part time call girls. Speculation of surveillance data suggests around 1,25,000 FSWs and about 35,000 each of the MSW and transgender sex worker nationwide. Most are juvenile (median age: 22 for MSWs and 27-28 for FSWs or Hijras) debut early in sex trade (age : 16-17 years for MSWs and Hijras and about 21 for FSWs) and captivate about 7—10 client per

week. About half depend on sex work for an income of about 3000 ($50) a month for MSWs, Rs 3600 ($60) for Hijras and Rs 12000 ($200) for FSWs. Only about 20% (MSWs/Hijras) to 30% (FSWs) of the sex workers report condom use with clients. (Khan A. et al., 2008.)

Religious proclamation and social standard strongly condemned male to male sex and is punishable under the Pakistan Penal Code. However, socio-religious prohibition against non-marital sex with women and easier access of homosexual activity, often leading bisexual lifestyles that are religiously as well as culturally accepted female kinship with the sex partner (men). In some places, MSWs and Hijras equal or more than FSWs and MSW epidemic is the major cause of FSW epidemic in such places. Anal intercourse is more effective way of transmission of HIV than vaginal intercourse once inaugurate among MSM or bisexual groups, HIV may lay out swiftly to the general population particularly women who are married to these men. (Beyrer C., 2007.)

The Epidemic among Bridge Groups:

The core groups transmit HIV to the general population through Bridge groups. They are more problematic to distinguish in Pakistani context, but wives of male IDUs, clients of sex workers, migrant workers and truck or bus drivers may be appropriate bridge groups.

Spouses of IDUs:

Likely near to be half of the IDUs and sex workers are married. While observed data suggest their exposure to HIV, the role of spouses or non-commercial partners of sex workers and IDUs in epidemic dissipation is less understood. Anecdotes reveal that many wives of IDUs enhance their income through sex work (NACP, 2004). A later study found that only 3% of IDU spouses reported ever selling sex, but 21% of these women injecting drugs (usually diazepam) through community based medical practitioners who also give therapeutic injections to community members using the same non-sterile injecting equipment. These steps increases the chances that the transmission of HIV from IDU spouses to general population perform the role of bridge, through shared syringes with other community members who got injection from same physician rather than via sexual contact (NACP, 2008).

Clients of Sex Workers:

Extrapolation of the national surveillance data reveal that more than 60 million sex acts are sold as per year in Pakistan to 3 million clients. In later study, of about 2400 men, 30% reported with non-marital sex in their lifetime, 41% of these acts were with FSWs and 14% with MSWs. (NACP, 2007) A further study of 600 nationwide migrant found that 13% reported non-marital sex of which 62% were FSWs. Although clients of sex workers are major drivers of the HIV epidemic internationally, their performance in the Pakistani epidemic is not well justified. Most of these men are married or have non-marital non-commercial partners, they may bridge in HIV transmission from sex workers to these women. (Faisal A. and Cleland J., 2006.)

Truck Drivers:

Truck drivers are at elevated risks of HIV transmission from unprotected sex with sex workers or casual partners during their lengthen absence from home. Their sexual partners include young boys or adolescent as "helper", female or male sex workers, other female non-commercial and their wives. There are approximately 2,00,000 truckers all over the country. (NACP, 2006.) They launch sex around 17 years, more than 60% are married and a part is in commercial or non-commercial extramarital sex and more than 8% use condoms. (NACP, 2008.)

Miners:

Miners spend most of their time away from home for work. An estimation is about >1,00,000 miners nationally. An estimation found that 42% had sex with their partners and 16% reported at least one STI symptom. (Balochistan AIDS Control Program, 2007.)

The Epidemic in General Population:

1. Therapeutic Injections:

Pakistan has extreme rates of therapeutic injections generally. One study believe similar overuse therapeutic injections for primary health trouble in general medical practice, dispensary and in the informal medical care sector. Moreover physicians, barbers and teeth-extractors use non-sterilized equipment. Due to

conventional facilitation, many IDUs and their spouses effective these providers. (Obaid S. et al., 2000.)

2. Blood Transfusions:

There are more than 1.5 million blood transfusion units that function whole year throughout the country, almost two third are in the public sector and remaining in the private sector or through NGOs. About 20-40% of blood is non-testified for contagious diseases. Except these, low HIV prevalence among non-selected blood donors. Among more than 41,000 non-selected blood donors at proper care centers between 1996 and 2005, 0 to 0.06% HIV with less than 4 cases in any year. Syphilis was 0.19—0.48%, Hepatitis B: 1.46—2.99% and Hepatitis C: 3.01—4.05%. Additionally, blood-borne transmission estimated 19% of all HIV cases. According NACP in 2004, on that time few cases were due to blood exposures. They are compatible with low HIV levels but high transmission potential. (Mehmood T. et al., 2007.)

3. Youth:

About 50% population of Pakistan is under 18. Recently more than 55 HIV+ infants, children or youth have been identified. Majority are whose, there mothers are HIV+ or transfused by infected blood. Recent study reveal about 30,000 youth or adolescents are street-based residential and of these 1 of 6 either sell sex or abuse drugs. In further study, from Karachi, street children inaugurated sex around 13-15 years of age and 30% sold sex to men and women. More than third forth, never used a condom, and if they used, it do so by the (older) partner. Most are solvents (90%) or marijuana (57%) users. In one study, of school going children 14-16 year olds, 1% of girls and 3% boys were sexually active, more than half of these were unaware of HIV or its risk factors. (NACP, UNICEF, 2005.)

4. Women:

The diagnosed HIV cases in women were prominent. Most are risky only by being married to either IDUs or other HIV+ men. Most are use unprotected sex practices and unaware about HIV risk factors. Their risk is boosted by their short approach to guidance and societal pressures, and lack of endeavour to seek cure on their own. Most are traditional households belonging patients registered on **HIV** centers and do not displace their HIV status to their marital partners or deny to bring their spouses for HIV services, despite counseling. (Adnan A. Khan and Khan A., 2010.)

5. Prisoners:

Several studies tested 18,541 prisoners for HIV positive cases and about 245 (1.32%) prisoners were positive for HIV (Memon G., 1997). Low literacy rates, poor socio-economic conditions and over-crowded populations could be the integrated factor with great prevalence in prisons. Additionally, prisoners rise the risk of HIV infection by using drugs (Basu S., et al. 2008). Pakistan have 90 prison cells built during the period of British rule. According to estimation in 2014, there were 79,700 prisoners found throughout the country with about 70% pretrial/ remand prisoners (World Prison Brief, 2016). Most of the prisoners have reciprocity with high-risk population and many of them were drug users and/or sex workers which could lead to high risk of HIV (Maqsood N., et al., 2009). Such sircumstances makes prisoners incubator for infectious disease. Although poor practice for routine testing of viral infections in this population group (Moorman AC., et al., 2012).

HIV genotypes in Pakistan:

Baki and his company screened prisoners in Karachi and only HIV-1 genotype predominant under the observation in studied population (Baqi S. et al., 1998). Because of limited information about genotyping and subtyping, there is very minute information about subtypes of HIV in Pakistan. As internationally, HIV-1 subtype (mainly subtype A) is identified in North and Central Africa; subtype B is prevalent in Australia, USA, Thailand, Europe and Brazil; subtype c has been observed in Ethiopia, India and South Africa (Tanaka R. et al., 2003). The Iranian hemophiliacs and IDUs have very prevalent HIV-1 (both type A and B) (Sabahi F. et al., 2006). In Uzbekistan and Kazakistan, HIV-1 subtype A has been reported in IDUs (Tanaka R. et al., 2003; Bobkov AF. et al., 2004). Subtype A,B,C, and D and some recombinant viral isolates have been reported in Yemen (Saad MD. et al., 2005). Turkey have been reported the type A,B,C, D and F (Yilmaz G. et al., 2006) and Lebanon HIV-2 subtypes A,B,C,D and G (Hu DJ. et al., 1998). Restricted knowledge about HIV in Pakistan which indicate more comprehensive study in the country for viral genotyping and subtyping.

HIV Prevention and Control Interventions:

Success HIV Prevention Interventions should be epidemic stage specific and approached to target populations with protective services. Under its "Enhanced HIV/AIDS Control Program" the Pakistani Government used $70 million of its own and donations during 2003-2008. One forth of these funds were used for prevention interventions of sex workers and IDUs, 20% for media compaign and 10% for inspection. Sex worker programs had more effective results (Hickman M. et al., 2006). Condoms, social services, behavior change counseling and syringes initially facilitated the prevention programs. Only about 10,000 from Healthcare Resource Group (HRGs) and 25,000 from general population were testified by July 2008. 2000 HIV+ individuals were facilitated by HIV care. About 963 among these were AIDS infective and got free antiretroviral medicines through 10 public and 3 private clinics. Except early successes, analyses display around 10-17% annual treatment failure rates for antiretroviral therapy treated patients.

Treatment therapies for HIV:

There is no efficacious inhibitory and/or treatment therapy to fully cure HIV-AIDS, although antiviral therapy can protract life expectancy in many patients. Highly Active Antiretroviral Therapy (HAART) consist of a combination of more than two antiviral drugs and has reported effective in neutralizing the HIV infection (Mehellou Y and De Clercq E., 2010). Recently more than 26 different drugs have been reported for the therapy of HIV infection which consist of viral reversed transcriptase and protease inhibitors (Menendez-Arias I. 2013). About 17 million people are living on antiretroviral therapy Worldwide (UNAIDS, 2016). Very minute information is available on treatment of HIV patients in Pakistan. Baki and colleagues conducted study on supervision of antiretroviral therapy in Pakistani HIV patients (n=300) and reported viral extinction in 94% individuals (survival for more than 3 months) (Baqi S. et al., 2012). More detailed studies using recently developed antiviral therapies need to be documented.

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