



Review: Prevalence of HIV in Pakistan

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ABSTRACT

This study describes the demographic status of HIV-infected people in Pakistan. The major risks factors involve in the spread HIV infection among the population of Pakistan are discussed. The overall prevalence of HIV has been observed to be getting higher as compared to the prevalence of early years. Use of population-based surveillance data provided a glimpse of need to spread the knowledge of HIV safety programs among each and every individual of Pakistan. Our findings emphasize the importance of targeting HIV testing and prevention efforts to populations at risk of HIV.

Keywords: Prevalence, HIV, Population, Safety programs, HIV testing.

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INTRODUCTION

HIV (Human Immunodeficiency Virus) is prominent in the list of diseases of public health importance (Centers for Disease Control and Prevention, 2012)¹. In humans, HIV infection is of two types one is HIV-1 and the second one is HIV-2. HIV-1 is further classified into major viruses (M), outlier viruses, non-major viruses and non-outlier viruses on the basis of genetic variation. Class of Major viruses is responsible for most of the human infections. This class of viruses is further divided into nine subtypes which are named as A, B, C, D, F, G, H, J and K. Major Viruses are mainly responsible In South Asia, India and Nepal prevalence of HIV-1 is higher as compared to HIV-1. Existence of these subtypes in different regions may vary. As subtype C is more common in occurrence in India (Kandathil *et al.*, 2005)². HIV infection is a gigantic challenge for public health system. In Asian countries, its wide spread and growing trend is quite alarming (Arendorf T, Holmes H. 2000)³. In Europe, Australia and North America, HIV outbreak has been noticed in the individuals who were injecting drugs (Chou *et al.*, 2012; Niccolai *et al.*, 2011)^{4,5}. The outbreak cannot be diminished without having protected sex between and within sexes (Wood *et al.*, 2008)⁶. Fear of HIV, financial problems, lack of communication and society unfair attitude with HIV patients are some of the factors which are quite a hindrance in the way of defeating HIV (Bruneau *et al.*, 2011; Wiessing *et al.*, 2011; Prentice, 2005; Sweat *et al.*, 2011; Obermeyer & Osborn, 2007; Spielberg *et al.*, 2001)⁷⁻¹². The risk factor of getting HIV in people, who inject drugs, staying in regions with high HIV prevalence, gays, sex workers, pregnant women, financially strained and socially cut is high. Minorities and aboriginal persons are also at risk to HIV (Wiessing *et al.*, 2011; Prentice, 2005; De la Fuente *et al.*, 2009)^{8,9,13}. Some researchers have called a connection between HIV and poverty a two way connection. Because they believe HIV causes poverty and poverty makes people vulnerable to HIV. A reason to support this belief is that people with financial strained are less likely to wear condoms and sex workers are unable to insist their clients to use condoms during intercourse (Bloom *et al.*, 1999). For the diagnosis of HIV, rapid test kits are available. These kits constitute oral kits to single use blood drop-based kits. There are some other levels of testing being used these days. One of them is community-based (CB) voluntary counseling and testing (VCT) whose cost is four times more as compared to facility based testing (Shrestha *et al.*, 2008)¹⁴. But community-based voluntary counseling and testing has proven effective (Sanders *et al.*, 2010; Farnham *et al.*, 2008)^{15,16}.

MATERIALS AND METHOD

Inclusion Criteria:

Studies were included in this review if they met the following criteria:

1. HIV infected people
2. HIV infected numbers in Pakistan
3. People who inject drugs

Search Strategy:

PubMed was searched with 'HIV', AIDS' and 'HIV in Pakistan' phrases starting from 2000 to 2015. Pakistan National AIDS Control Program reports were studied thoroughly from 2005 to present. Clinical trials, reviews, meta-analyses, letters, editorials, and practice guidelines were all considered. Recent estimates and data were obtained from websites of international agencies such as the World Bank and the UNAIDS. In reading the articles, the reference lists were checked to identify any other articles that may have been relevant to the topic.

RESULTS AND DISCUSSION**Worldwide Spread:**

The history of HIV infection goes back to thirty years. According to recent reports, 38.1 million people have become infected with HIV and 25.3 million people have died because of it from 2000 to present year. In 2014, an estimated 36.9 million people were living with HIV including 2.6 million children. This makes global HIV prevalence of 0.8%. Almost 18%–28% individuals use shared needles or syringes in world. The prevalence of usage of condom is 20%–54%. The prevalence of having sex with sex workers and of men having sex with men is 15%–30% in some countries. In Asia, almost three to five million people who injects drugs (UNAIDS. HIV in Asia and the Pacific: Geneva, 2013)¹⁷. This mode of drug injection is major factor spreading HIV and HCV in Asia (Wu *et al.*, 2013)¹⁸. HIV prevalence among people who use drugs ranges from over 40 % in the Philippines (Department of Health. Integrated HIV Behavioral & Serologic Surveillance: Philippines, 2013)¹⁹ to under 10 % in China (UNAIDS. Global AIDS response progress reporting: China, 2014)²⁰. Presence of HIV in children is of great concern and that is also to 3 million in number. In 2004, pediatric antiretroviral treatment for HIV children got recognition. It resulted in fall of death numbers in children.

HIV Status in Pakistan:

In 2001, it was the first time that more than one case of HIV was found in different regions of Pakistan. Prevalence rate in Pakistan is about 0.1%. Pakistan and India share the same time span for the rise of first cases of HIV. At present, there are about (96,000) persons with HIV. The

number of females with HIV infection is estimated to be around 19,000 to 42,000. The death tolls observed in the year of 2007 were from 3500 to 8200 (UNAIDS/WHO. 2008)²¹. The government initiated the National AIDS Program (NAP) in 1987 to coordinate the efforts of tackling the threat of HIV. In 2001, a national HIV/AIDS strategic framework was developed to address the issues of prevention and control in Pakistan. In Pakistan, there are estimated 100,000 intravenous drug users having an HIV prevalence of 10-50% within them (data from four urban areas) (World Bank. 2009)²². About 40% of annual blood transfusions are not screened for HIV (UNAIDS/WHO. 2008)²¹. In case of Pakistan, female sex workers and their clients, truck drivers who travel long distance, blood recipients and intravenous drug users are most susceptible to HIV infection (Hyder AA & Khan OA.1998)²³. Prostitutions, illiteracy and lack of awareness of safe sex encourage HIV in Pakistan (World Bank. 2009)²².

The epidemics of HIV in Pakistan has been stated as emerging and concentrated by the Health experts. In most countries with high HIV prevalence, recent studies report increasing HIV prevalence starting around 2003 including Pakistan. Almost 40% rise in prevalence has been observed since 2003. In one study, data about number of HIV patients in South Asia and Middle East were studied and it was found that largest data were found to be in Pakistan, Iran and Egypt. In Pakistan, 101 HIV prevalence measures on a total of 24,445 and these are individuals who inject drugs. It was stated in that study that this data study is conclusive. In 2009, prevalence of sharing needles/syringes among people who inject drugs was 79% (Nai Zindagi, 2009)²⁴. In 2014, individuals who inject drugs were about 117000 in number (Mumtaz *et al.*, 2014)²⁵. In Pakistan prevalence of injecting drugs ranged from 0.02% in Rawalpindi to 0.87% and 1.07% in Sargodha and Faisalabad, respectively (Emmanuel *et al.* 2010)²⁶. About 52% counts for total prevalence of HIV in people who injects drugs in Faisalabad. This data was collected in 2011(Pakistan National AIDS Control Program (2011)²⁷ HIV second generation surveillance In Pakistan). In Pakistan, most injecting occurs in groups and in public places, and reported use of “street doctors” or professional injectors was common, which is associated with high reuse of injecting equipment (Pakistan National AIDS Control Program, 2008)²⁸. Most abrupt increase in HIV prevalence started in 2003. A study was conducted in three cities of Pakistan on 500 persons who were injecting drugs. It was reported that HIV incidence was 1.7/100 person-years (Hadi *et al.*, (2005)²⁹. Investigating the notified cases of HIV among the intravenous drug users in Pakistan, it was reported to be 23%. HIV prevalence in intravenous drug abusers has steadily increased from 10.8% in 2005 ($n=2,431$) (Pakistan National AIDS Control Program (2005)³⁰, to 15.8% in 2006 ($n=4,039$) (Pakistan National AIDS Control Program, 2006–07)³¹, 20.8% in 2008

($n=2,969$) (Pakistan National AIDS Control Program, 2008), and 25.2% in 2011 ($n=4,593$) (Pakistan National AIDS Control Program, 2011). Reported levels of condom use varied but generally were on the low to intermediate range. Overall, 36% of people who inject drugs reported ever using condoms with the lowest prevalence and Pakistan (10%–38%) (Nai Zindagi, UNODCCP, UNAIDS, 1999)³². A median of 18% of male PWID in MENA reported ever having sex with men (IQR: 11%–27%), and a median of 7% did so in the last year (IQR: 2%–10%). The highest rates of same-sex sex have been reported in Pakistan. Reported condom use during anal sex was overall very low. Selling sex in the past year was reported by 5%–29% of in Pakistan (Mumtaz *et al.*, 2014)²⁵. In increasing epidemic of HIV, transgender sex workers has significant role. Phylogenetic analyses found clustering of subtypes between the two populations, suggesting that the infection might have bridged from PWID to the transgender population (Khanani *et al.*, 2011)³³. Prevalence of HIV in Karachi increased from zero to 23% till 2004 in time span of six months (Altaf *et al.*, 2007; Altaf *et al.*, 2003; Baqi *et al.*, 1998; Parviz *et al.*, 2006; Bokhari *et al.*, 2007)³⁴⁻³⁸. This number increased to 42% till 2011 (Pakistan National AIDS Control Program, 2011). While the prevalence of HIV in Karachi was zero, prevalence of HCV was more than 85% at that time (Altaf *et al.*, 2007; Altaf *et al.*, 2003)^{34,35}. In both Iran and Pakistan, injecting networks often seem to be well connected and we found reports of injecting and sharing occurring among persons (Razzaghi *et al.*, 2006; Emmanuel & Fatima 2008)^{39,40}.

Pakistan has also made progress in revising their policies, adopting harm reduction programs, and integrating such programs in their national strategic plans. The scope and coverage of prevention services remain patchy across and within countries. The level of services can be analyzed by noticing the fact that only few individual are reported being tested for HIV infection (Abu-Raddad *et al.*, 2010)⁴¹. Irony is that out of 37% of people who know about HIV prevention program only 19% adopted HIV prevention programs in their life style (Pakistan National AIDS Control Program, 2005). By enhancing harm reduction services, expansion of surveillance systems, HIV counseling, testing strategies like home-based, work-based and parole office-based testing, peer-based and community-based voluntary counselling and testing, mobile testing and universal population testing are some of the opportunities to prevent HIV expansion (White *et al.*, 2009; Gordon *et al.*, 2013)^{42,43}. In most of the communities, poor performance in conventional testing, ordering an HIV blood test and having the patient return for results have attributed in HIV spread (World Health Organization (WHO, Global HIV/AIDS response Progress Report, 2011)⁴⁴. About 49% of HIV affected people in the Asia cannot access the ant-

retroviral therapy. Only 18% Eighteen percent of the total number of people living with HIV eligible for antiretroviral treatment accessed treatment (WHO; UNAIDS ; UNICEF, 2013)⁴⁵. In Morocco and Pakistan, two countries with a strong HIV response, only 32.5%, 47.8%, 6.1%, and 20.7% of PWID in different surveys reported ever being tested (Pakistan National AIDS Control Program, 2008; Pakistan National AIDS Control Program, 2006–07). Still there is lot of hidden cases of HIV in Pakistan, so there is a possibility of unreported epidemics in different regions of country. Some HIV individuals do not even know about their presence of infection. They do not have access to HCV services like VCT. Such individuals are the silent carrier of HIV.

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