

EDITORIAL

HIV Disease Burden and Stigma in Pakistan: The role of Local Institutions

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With the ongoing human immunodeficiency virus (HIV) epidemic in the developing world, Pakistan has been registering 20,000 new HIV cases every year for the past few years, the highest rate of increase among all countries in the region.¹ In Pakistan, HIV disease has affected high risk, key populations for more than 30 years², with key populations defined as sex workers, men who have sex with men, transgender individuals, injections drug users, and recipients of contaminated blood.^{3,4} In 2019, a completely new HIV landscape rose to the global spotlight when around 1175 people (including 935 children under 12 years of age) were tested positive between April 25th to November 15th, 2019 in Sindh, Pakistan, followed by similar reports from other parts of the country. These new infections are attributed to new risk factors outside of the historical key populations, including use of contaminated needles for routine vaccination, intramuscular and intravenous medical treatment, and blood transfusions received through illegal blood banks⁵. These statistics were alarming: the country's healthcare system was not ready, nor is it currently ready, for a widespread HIV epidemic. In addition to international aid, Pakistan requires active involvement from the local healthcare sector to curb the HIV epidemic. At the local level, an understanding of HIV disease is the first step towards this goal.

How can local institutions help? In my opinion, the answer is in three words: **educate, educate, and educate**. Local institutions can help to reduce stigma and increase awareness about the disease by empowering current and future healthcare providers (physicians, nurses, para-medical staff, and healthcare administrators) with HIV disease knowledge and helping them understand the importance of communication between providers, patients, and families. They can disseminate knowledge about the disease, existing HIV care infrastructure, and locations of HIV care centers known as Antiretroviral Treatment (ART) Centers, as well as establish links to ART Centers. This will ultimately increase the number of patients with access to HIV medications and thus the number of patients on treatment.

HIV care involves ART usage and regular visits with the HIV care provider. The cost of HIV care is estimated to run anywhere from \$1,800 to \$4,500 dollars each month during an individual's lifetime in the United States. Of this amount, nearly 60% comes from the high cost of ART medications.⁶ However, costs are lower in low and middle income countries due to lower drug company pricing and access to generics as compared to high-income countries.⁷ Luckily, in Pakistan, HIV testing and ART are available free of cost through government programs with the help of international agencies. The National AIDS Control Program (NACP) was established in 1986-87 and currently offers free HIV care and testing for the families of people living with HIV. Aside from NACP, each province in Pakistan has its own AIDS Control Program. These programs have established 49 ART centers to provide free HIV care nationwide. According to the NACP website, Pakistan has an estimated 1.9 million people living with HIV. There are currently 44,758 registered cases throughout the 49 ART centers, and of these cases, 24,362 individuals (54%) are on ART as of December 2020.⁸ This implies that there are over one million people who are infected and not on HIV treatment, which has serious consequences for both their health and their ability to transmit HIV to others. There is robust evidence from international clinical trials that people living with HIV who are on treatment and have an undetectable viral load cannot transmit disease to others; this evidence has given rise to the international "U=U" (Undetectable = Untransmittable) campaign⁹. These statistics paired with the public health implications of untreated disease compared to the public health implications of U=U, calls for a strong collaboration between government agencies, healthcare institutions, medical colleges, and individual providers to identify individuals living with HIV, and start treatment in order to control Pakistan's HIV epidemic.

HIV disease was first reported in 1981 as a disease. The virus, identified in 1983, is part of a group of viruses called retroviruses. It is a virus spread through certain body fluids, including blood, genital fluids, and breast milk. HIV attacks the body's immune system, especially

the CD4 T-cells which help the immune system fight infections. If left untreated, HIV reduces the number of CD4 T-cells in the body and damages the immune system, making it difficult for the body to fight certain illnesses and leaving individuals at risk of developing serious infections and cancers. Current treatment of HIV with ART reduces the amount of virus in the body so that the immune system can work normally. There is no cure for HIV, and therefore HIV cannot be cleared from the body. The good news is that if people living with HIV take their medications as prescribed, their viral load decreases to an undetectable level and they can live long and healthy lives, with effectively no risk of transmitting HIV.

The World Health Organization (WHO) defines four stages of HIV disease based on clinical conditions.¹⁰

Stage 1: Early HIV infection (asymptomatic), patients may remain in this stage for several years. **Stage 2:** Mildly Symptomatic Stage with symptoms like unexplained weight loss of less than 10 percent of total body weight and recurrent respiratory infections, as well as a range of dermatological conditions. **Stage 3:** The moderately symptomatic stage with symptoms like weight loss of greater than 10 percent of total body weight, prolonged unexplained diarrhea, pulmonary tuberculosis, severe systemic bacterial infections, bone and joint infections, bacteremia, and mucocutaneous conditions. **Stage 4:** the severely symptomatic stage also known as Acquired Immunodeficiency Syndrome (AIDS) stage, includes all of the AIDS-defining illnesses like HIV wasting syndrome, *Pneumocystis pneumonia*, recurrent severe or radiological bacterial pneumonia, extrapulmonary tuberculosis, HIV encephalopathy, CNS toxoplasmosis, chronic or orolabial herpes simplex infection, esophageal candidiasis, Kaposi's sarcoma, and many others. These stages apply to adults and adolescents 15 years-of-age and older. Definitions of clinical staging for infants and children under 15 are defined by WHO differently.

HIV transmission is due to blood-to-blood contact or sexual contact. **Specific modes** for Pakistan and other Asian countries can be classified into 4 major groups: 1) the **iatrogenic** group includes individuals who were infected through shared contaminated needles, contaminated instruments used during medical or dental procedures and surgeries, and contaminated blood used for transfusion; 2) **recreational drug users** who shared contaminated needles or crack- cocaine snorting instruments; 3) **social or familial transmissions**, including mother-to-child HIV transmission, shared contaminated razors and shaving blades within a household, or use of contaminated

instruments by barbers and beauty parlors; and 4) **sexual transmission** including unsafe sex with any HIV-positive patient, including Men who have Sex with Men, and HIV- positive individuals providing sex services.

Myths and Facts about HIV: It is important to know that HIV **cannot** be spread through: 1) saliva; 2) sweat; 3) tears; 4) casual contact such as sharing food utensils, towels and bedding; 5) shared swimming pools; 6) shared telephone sets or toilet seats; 7) biting insects such as mosquitoes; and 8) hugs or hand shaking with any person who has the disease.

Role of healthcare administrators: Healthcare administrators can adopt a number of innovative strategies, including: 1) use nutrition stabilizing centers for HIV testing and awareness; 2) open combined centers for HIV medication for all ages; 3) make HIV testing a requirement for at-risk pregnant women and start ART if positive; 4) provide HIV testing to patients who are diagnosed with Hepatitis C and TB, 5) use local and national media outlets to educate people about HIV to reduce stigma; 6) utilize local religious gatherings for HIV awareness, 7) establish medical waste management systems; and 8) establish more laboratories for HIV viral load testing at district or tehsil level or in the private sector. Because HIV is most prevalent among the Injection Drug Users in Pakistan; many NGOs are working to help this population with financial support from international agencies. These NGOs can play a vital role in helping people living with HIV to live a healthy life and hence control the future transmissions. However, clear accountability- based regulatory policies are needed to streamline and standardized the competitive outcomes of these NGOs.

Role of medical colleges or teaching institutions: Medical colleges and teaching institutions should require their students to: 1) learn more about the existing facilities and treatment regimens offered by the government in order to fully utilize them; 2) support or adopt local ART centers for training and volunteer work; 3) offer preventive support to their patients by learning more about HIV testing and Pre-Exposure Prophylaxis-offering programs; 4) provide counseling before and after HIV testing; 5) understand that the early initiation of ART shortens the time between diagnosis and viral suppression, improves retention, and lowers the risk of transmission sooner; 6) educate patients on the benefits of ART and adherence; 7) adopt safe practices in healthcare provision by not reusing needles from one patient to the next; 8) offer training programs to stigmatized patients and families;

9) follow best practices and standard precautions with all patient contact; 10) create awareness in patients about the consequences of needle sharing during recreational drug use; 11) create community awareness programs, with a special focus on very poor socioeconomic status communities; 12) create community education teams of students and faculty, in collaboration with local social work agencies or NGOs; and 13) offer more infectious disease courses and arrange conferences and webinars with help from international experts. Most importantly, medical colleges and teaching institutions must foster empathy in current and future healthcare leaders to face the many challenges of the HIV epidemic.

In summary, local healthcare institutions and medical colleges in Pakistan can play a vital role in controlling Pakistan's HIV epidemic through educating themselves, their colleagues, their students, and their patients, and by adopting complementing strategies implemented by government agencies.

Keywords: HIV in Pakistan, HIV Stigma and Awareness, HIV Prevention, HIV Education.

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