

ORIGINAL ARTICLE

HIV Prevalence in Dera Ismail Khan, Khyber Pakhtunkhwa, Pakistan

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ABSTRACT

Although HIV prevalence in Pakistan has been well documented, no data has yet been found on HIV prevalence in the Dera Ismail Khan, KPK region. A total of 300 people were interviewed, or their medical data were reviewed between June 2021 and December 2021. Written informed consent was obtained from those selected using a convenient sample approach, and they were made aware of the study's protocol. HIV antibodies were detected in blood serum (Enzyme-linked immunosorbent assay, Western Blot). A total of 60 people (or 0.497 percent) tested positive for anti-HIV. The patients ranged in age from 30 to 60, and 73.33 percent of them were male. The vast majority of patients (56.67 percent) were urban inhabitants, divorced or widowed (60 percent) and uneducated (45 percent). Over eleven percent (11%) of the patients admitted to using injectable drugs. Injection drug usage was the most significant risk factor for HIV infection, compared to blood donation/transfusion and sexual contacts. The most significant conclusion was that DI Khan had a higher HIV prevalence than the national average. A dangerous scenario necessitates preventive measures tailored to the context. Blood donation/transfusion and extra-marital sex should be avoided in order to prevent the risky behaviors of injection drug addiction and blood donation/transfusion.

Keywords: Pakistan, KPK, HIV, Prevalence, and Risk factors

INTRODUCTION

Infection with the HIV (human immunodeficiency virus) causes a gradual depletion of the human immune system, a condition better known as the acquired immunodeficiency syndrome (AIDS). HIV causes the death of CD4 T cells, which are responsible for coordinating the humoral and cellular responses in the immune system, in a slow but progressive manner. HIV prevalence in Pakistan's general population is believed to be less than 1%, with 165 000 people infected. Living with HIV is a difficult situation. In June of this year, a total of 24 331 persons (14.7% of the population) have registered with the National AIDS Control Organization (NACP), up from 4500 in the previous year. In 2013, the following were the most common diagnoses among registered patients: Anti-depressants are being given to 17 149 people (705 percent). ART (antiretroviral treatment), although a total of 7182 people (29.5%) did not attend a meeting appointment for a follow-up in the within the last six months. Those who are being given 5228 persons (30.5 percent) are undergoing therapy, who use drugs and inject them [1]. In Pakistan, the HIV/AIDS epidemic is on the rise, concentration among key demographics: injecting drug users (38.4% of the total) HIV-positive men; male sex workers, female sex workers

(2.2%) sex workers who are transgender (7.5%); males who have intercourse with other men (5.4%); and persons who are transsexual (7.1%) [2]. The pandemic is following a pattern seen in Asia: after people's numbers had reached a halt. It moves to those who inject narcotics by sexual contact with the broader public networks and population bridging despite the fact that life-saving equipment is readily available, Pakistan's ART is registering the fastest rate of growth of all the countries in the area [2]. In the village of Kot Imrana, (a tiny village in the district of Sargodha), the prevalence rate increased from 12.9 percent to 13.5 percent. In just six months, the company grew by 13.38 percent [3]. A recent study found that upsurge of HIV in the Larkana District has cast doubt on the performance of the Sindh AIDS Control Program and the NACP. 26 041 people have been screened in Larkana, identifying 751 cases of HIV, including 604 (80%) children living with HIV [4]. A single district in Pakistan has seen at least eight outbreaks of HIV in the past two decades. Unqualified health practitioners (locally referred to as "quacks") filling gaps in primary health care and barbers reusing razors are thought to be substantial contributors to HIV outbreaks, despite the fact that critical populations play an important role in disease transmission [1].

Possible drivers identified by WHO for this outbreak are unsafe blood transfusion practices, reuse of needles, male circumcision with unhygienic blades, and ear and nose piercing with unsafe needles [4]. The current scenario suggests that the overall prevalence of HIV in the general population is under-reported in Pakistan.

It is the goal of the NACP to register all HIV-positive people, engage high-risk populations through community-based organizations, and make efforts to deliver free HIV testing and treatment in order to attain universal access to ART without social prejudice or stigma. Only an estimated 89% of those infected with HIV are receiving treatment, according to a recent report. There would be an increase in new HIV infections if interventions are not scaled up, according to the WHO national office [5]. Key issues were brought to light in the most recent UNAIDS Pakistan Country Progress Report in 2018. Because of the lack of effective community engagement and medical malpractice by unregistered and unqualified people (referred to locally as "quacks") who claim to offer medical care, the HIV response has stalled since the devolution of the Ministry of Health to the provinces in 2010 [6]. Access to HIV services and societal stigma and prejudice are just two of the pressing issues that need to be addressed urgently.

There have been no reports of HIV prevalence among the population of Dera Ismail Khan, KP, Pakistan, according to available data. The purpose of this study was to determine the prevalence of HIV, as well as to assess knowledge and risk behaviors linked to HIV among people of Dera Ismail Khan, KP, Pakistan.

METHODOLOGY

Sampling: This retrospective report spanned a period of approximately six months, from June 2021 to December 2021, and included 300 persons who visited the Sexually Transmitted Infections (STIs) at DHQ hospital in DI Khan, and Mufti Mehmood Hospital DI Khan, Pakistan, during that time. Participants were either recruited or their medical records were reviewed depending on the situation. Written informed consent was obtained from individuals recruited using a convenient sampling approach, and they were advised of their rights.

Data Collection: Age, gender, residence, contact information, NIC, family tree, education, marital status, occupation, history of sexually transmitted diseases (STDs), and high-risk behaviors (blood transfusion, blood donation, intravenous drug misuse, and sexual behavior) were collected from each patient. In addition, the form was pre-tested by trained investigators, and some questions about sexual behavior were modified. It was determined whether the individual was homosexual, heterosexual, or bisexual. The participants in the study remained anonymous.

Biological Testing: The patient's records were collected from Clinical Pathology Laboratories, DHQ hospital in DI Khan, KPK, Pakistan. While in the case of new enrolments, blood samples were centrifuged and the sera were analysed for the presence of antibodies to HIV-1 and HIV-2 (using an enzyme-linked immunosorbent assay and a Western blot analysis, both from Abbot and Cambridge Biotech, respectively) before being included.

Statistical Interpretation: Number (n) or mean (m) were used to express all of the data (standard error). A multivariate analysis of variance was used to identify potential risk factors in this study (MANOVA). When the p value <0.05, it was determined to be statistically significant. In this study, statistical analysis was carried out using software from Statistical Package for the Social Sciences (SPSS Inc. in Chicago, Illinois, USA) (version 15.0).

RESULTS

Patients (n=300) was either tested, who tested positive for HIV were either examined or had their medical records reviewed. Tables 1 and 2 provide a summary of data relevant to demographic parameters and risk variables. Sixty persons of the recruited group tested positive for HIV.

Table 1: Demographic Characteristics of Patients

Characteristic	Number (n)	P Value
HIV (+)	60	
Age Mean (SE) Years		
Age range (Min-Max) Years (35-60)	29	
Gender		
Male	44	0.000
Female	16	
Residence		
Urban	34	0.000
Rural	26	
Marital Status		
Married	11	0.005
Unmarried	13	0.071
Divorced/Widowed	36	0.001
Education		
None	27	0.002
Primary	18	0.009
Secondary	14	0.043
Graduate	1	
Higher	None	
Occupation		
Self Employed	26	0.000
Employee	12	0.001
Unemployed	22	0.012
Other Diseases		
HBV	None	
HCV	None	
TB	None	
Care Giver		
Self	7	
Other Person	53	
Treatment Status		
Treatment	ART	

Table 2: Risk Factors for HIV

Factor	Number (n)	P Value
Blood donor	23	0.000
Injection Drug User	7	
Blood Transfusion Recipient	19	
Reuse of Syringe	1	
Sexual Behavior		
Heterosexual	56	0.042
Homosexual	4	
Bisexual	None	
History of STDs		
Yes	32	0.001
No	12	0.031
Unknown/Unclear	16	0.004

The average age of the HIV-positive population was approximately 50 years, with the vast majority (85.55 percent) being male. The age group with the highest incidence of HIV was 30-60 years old, which accounted for 51 percent of the infected population. When comparing the male and female samples, HIV positive was significantly more prevalent ($p=0.001$) in the male group (3:1 ratio). It was discovered that 56.67 percent of HIV positive individuals lived in urban areas ($p = .035$), which is consistent with previous findings.

While the burden of HIV was higher in the divorced and widowed (60%, $p = 0.001$), it was less prevalent in the single (21.66%, $p > 0.071$) and married (18.33%, $p > 0.005$) populations. Almost half of the affected subjects (47.5 percent) were illiterate, with only 30 percent having completed primary education.

HIV prevalence was considerably greater in individuals who were uneducated ($p = 0.002$) and those who had just a primary education ($p = 0.009$). The employment status of ill individuals was statistically significant, with 43.33 percent being self-employed ($p = 0.000$) and 20 percent being workers ($p = 0.001$) as the primary occupations. The percentage of unemployed individuals was 35 percent ($p = 0.012$).

Participants who used injection drugs made up a disproportionately smaller share of the group (11.67 percent) (IDU). Major fractions, on the other hand, were implicated in unprotected blood donation and transfusion, which accounted for 38.33 percent and 48.33 percent, respectively. While only a single patient was infected by the use of a used syringe. IDU was found to be a constant causal factor for HIV infection in this statistical study. Donation and transfusion of blood were found to be sensitive indicators of the risk of HIV infection.

Multiple partners and extramarital relationships appeared to be uncommon among the local population, according to the data. About 93 percent identified as heterosexual ($P = 0.042$) and expressed reluctance to divulge information about their partners, if any. An estimated 35 percent of participants reported having had a history of sexually transmitted infections (STDs). However, almost half of those surveyed were unaware of previous STD occurrences.

DISCUSSION

AIDS is a global health problem that has both social and economic consequences. After HIV was reported in 1987, there has been a slow but steady increase of the disease in Pakistan. Indigenous HIV positivity and future AIDS cases will rise due to a lack of initial prevalence magnitude and underlying causes. Early detection of HIV prevalence and associated risk factors is critical, as are preventive actions [7].

The first ever HIV prevalence study was conducted in DI Khan, Pakistan, and the results show a prevalence of HIV of 0.54 percent. In 1992 and 1995, the National Aids Control Program (NACP) reported an HIV prevalence of 0.064 percent [8]. HIV prevalence was later estimated by NACP to be 0.1 percent in 2001 [9-10]. In 2007, 0.00542 percent of the HIV population was estimated to have been infected. The study's most significant conclusion was that the prevalence of HIV was higher than previously

estimated. Preventive measures are needed in this alarming circumstance. It is possible to find regional studies from Lahore to Karachi to Peshawar and beyond. In Karachi, studies by Khanani et al. [11] and Mujeeb & Hashmi [12] found an HIV seroprevalence of 0.73 percent and 0.147 percent, respectively. In Lahore, Peshawar, and Northern Pakistan, prevalence rates ranged from 0.06 percent to 0.1% [13-15].

To some extent, our findings were in line with those of earlier research, which found an age range between 20 and 50 years and a 35-year median age for infection [7]. HIV patients were found to have a male-to-female ratio of 6:1. Kayanai and colleagues [16] found that the average male to female ratio in their study was 5:1, while Iqbal and Rehan found a ratio of 2:1.

HIV serostatus is influenced by factors such as marital status, education, and employment. The presence of HIV was substantially associated with living in a city [7,17]. The vast majority of those who tested positive for HIV lived in metropolitan areas. Since rural populations are less susceptible to HIV, this can be deduced. Moreover, urban populations should be the primary focus of HIV preventive efforts. Current findings show that urban and rural populations in India are nearly indistinguishable when it comes to HIV prevalence [18].

According to a review of the scientific literature, no studies have explored the link between HIV infection risk and marital status in Pakistan. Married people were shown to have a decreased risk of contracting HIV. A study by Shisana et al shows that married people are less likely to contract HIV than those who are not married [19].

In the current study, the percentage of infected people was found to be inversely associated to literacy levels. As one's degree of education rose, so did the predominance. One of the most important risk factors for HIV transmission in underdeveloped countries is illiteracy [20]. HIV status is influenced by education, as demonstrated by Kirunga and Ntozi [17]. For new educational syllabi, especially those involving sex education, Pakistani religious and socioeconomic circumstances provide significant challenges [21].

In the recent investigation, all of the affected participants were virtually evenly distributed among three occupational groups. As a result, individuals' choice of occupation had no bearing on their risk of contracting HIV. Kirunga and Ntozi [17] drew the same conclusion as we did on the insignificance of occupation in HIV development.

Four possible risk factors, as outlined below. MANOVA was used to examine the relationship between blood donation/transfusion, injecting drug usage, sexual orientation (heterosexual, homosexual, bisexual), and prior STD infection. HIV was transmitted mostly through intravenous drug usage.

Current estimates of HIV prevalence in the United States are based on major screening programs for high and low-risk populations. An accurate picture of IDUs in the general population can't be painted with this kind of information. Since IDU have an extremely high rate of HIV infection, there is a pressing need to raise awareness about how risky it is to reuse needles [21,22]. In our research, we found no evidence that blood donation or transfusion could transmit HIV. Despite Pakistan's low HIV

prevalence, the country faces a potential HIV epidemic in the future because of several risky behaviors prevalent in Pakistani society, particularly regular blood giving and transfusion. At both public and private health care facilities, poor facilities, and a lack of attention to detail in blood screening are commonplace. The spread of HIV may be aided using STDs. HIV was not influenced by the study participants' history of STDs. WHO estimates that among Pakistani STD patients, there is a 0.3 percent HIV prevalence [22].

HIV was not influenced by sexual choice or the absence of a previous STD. Be cautious about accepting these conclusions because religious and societal beliefs not only decrease such tendencies but also limit the revelation of them.

CONCLUSION

Because HIV infection is rampant in Pakistan's DI Khan region, and this study offers a unique potential to prevent the virus from spreading further, it should be pursued. The use of injection drugs (IDU), blood donation/transfusion, extramarital sexual encounters, and the use of contaminated syringes have all been identified as the primary reasons of the outbreak in the area. The rehabilitation of drug users may be a viable technique for eradicating one of the primary causes of the epidemic's development. In order to minimise sickness, extensive testing prior to blood transfusion will be an effective technique. In addition, the use of sanitised surgical equipment by doctors and barbers will aid in the reduction of cases. The most effective technique for avoiding HIV infections is to adhere to religious principles in order to avoid extramarital sexual encounters.

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