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Prevalence and Recent Trends of HIV Infection in Faisalabad

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Abstract

Human Immunodeficiency Virus (HIV) remains a serious public health issue in Pakistan, with concentrated epidemics in urban centers such as Faisalabad. Unsafe injection practices, unprotected sexual behaviors, and poor awareness continue to drive transmission.This study aimed to determine the prevalence of HIV infection among individuals screened in Faisalabad and to identify key demographic factors and probable reasons for infection.A descriptive cross-sectional study was conducted from [June,2025] to [July,2025] in Faisalabad. A total of 114 individuals were screened for HIV using rapid diagnostic kits, with positive results confirmed by ELISA. Demographic and behavioral data were collected through structured interviews. Descriptive statistics were used to calculate prevalence, and associations were explored with chi-square tests.Of the 114 participants, 6 (5.3%) tested positive for HIV. All positive cases were adult males aged 23 years and above. The primary factors contributing to HIV infection included sharing of contaminated syringes among people who inject drugs (PWID), unprotected sexual contact, and unsafe medical procedures in informal healthcare settings. Lack of awareness and stigma were also significant barriers to early testing and prevention.This study highlights a concerning HIV prevalence among adult males in Faisalabad, linked to preventable risk behaviors and gaps in harm reduction. Strengthened community awareness, safer injection practices, expanded testing, and improved infection control in medical settings are urgently needed to curb further spread.

INTRODUCTION

Human immune deficiency virus (HIV) is still one of the biggest public health issues in the world, even though prevention and treatment have advanced significantly in recent years. An estimated 1.5 million new infections occurred in 2021, and 38.4 million people worldwide were living with HIV, according to the Joint United Nations Programme on HIV/AIDS (UNAIDS, 202). HIV is especially prevalent in low- and middle-income nations, where access to healthcare, public awareness, and preventative measures are frequently insufficient (Murewanhema et al., 2022).

Although HIV prevalence in Pakistan was once thought to be low, it is currently thought to be concentrated in key populations, such as injecting drug users (PWID), sex workers, and men who have sex with men (MSM). There has been a consistent rise in HIV cases, according to recent surveillance reports, especially in urban areas and among marginalized communities (Ahmed et al., 2021). HIV prevalence has been on the rise, according to a study done in Faisalabad that also revealed serious deficiencies in testing, treatment, and awareness (Saleem et al., 2019).

Punjab is one of several areas where outbreaks have been observed in recent years. One of Punjab's largest industrial cities, Faisalabad, has seen a rise in HIV incidence, with a notable prevalence among PWID and high-risk urban adolescents (Saleem et al., 2019). An HIV prevalence of 0.55% was found among the tested population in a retrospective study carried out in Faisalabad between 2010 and 2012; injectable drug usage was found to be the main method of transmission (Mann et al., 2014). The epidemic is still present in the area due to a combination of factors, including ongoing urban migration, low awareness, and insufficient harm reduction initiatives (Khan et al., 2020).

It is essential to comprehend the current HIV prevalence in order to develop efficient interventions and allocate resources properly. But there is still a dearth of local data, and stigma and limited access to healthcare services frequently result in underreporting. (Khan et al., 2020).

According to a retrospective study carried out at the District Headquarter Hospital in Faisalabad between 2010 and 2012, the HIV prevalence for HIV-1 was roughly 0.54%, which is significantly higher than earlier national estimates (Ali et al., 2011). Additionally, this study found that 78% of infections in the impacted population were caused by injection drug use, making it the main risk factor.

Despite the growing public health concern, there is still a lack of recent, trustworthy data on the prevalence of HIV and its risk factors in Faisalabad. According to Ali et al. (2023), stigma and underreporting further obfuscate the true cost of the illness, hindering successful prevention and control initiatives. Producing current local evidence is crucial for directing focused activities, influencing legislative choices, and bolstering HIV testing and treatment programs.

The present study aims to:

- Estimate the current prevalence of HIV infection in Faisalabad.
- Identify demographic and behavioral risk factors associated with HIV transmission.
- Provide evidence-based recommendations to improve local HIV prevention and control efforts.

MATERIAL & METHOD

Study Design

A descriptive cross-sectional study was conducted to determine the prevalence of HIV infection and associated risk factors in Faisalabad, Pakistan.

Study Population

The patients of the study were the individuals between the ages of 18 year and above visiting among the HIV test centers between the study period. Those who participated in the research covered general citizens who volunteered to take the tests as well as those at high risks (e.g., intravenous drug users, sex workers, men who have sex with men, as well as prisoners).

Study Duration

The data collection period spanned from [June,2025] to [July ,2025].

Sample Size

A sample size of 114 individuals was selected using non-probability purposivesampling. The size was estimated by the past prevalence estimate and resource availability. Adequate efforts were made to achieve balance in terms of not only their genders but age as well.

Sampling Technique

Participants were selected using a non-probability convenience sampling method. Individuals who consented to participate and met the inclusion criteria were enrolled consecutively.

Inclusion Criteria

- Individuals aged [e.g., 18 years and above].
- Residents of Faisalabad district.

- Willing to provide informed consent.

Exclusion Criteria

- Individuals who refused consent
- Visitors or non-residents of Faisalabad
- Individuals previously diagnosed and under treatment for HIV
- Individuals who less than 18 years.

Data Collection

Data were collected using a structured, pre-tested questionnaire administered through face-to-face interviews. The questionnaire included sections on demographic information (age, gender, marital status, education, occupation) and potential risk factors (history of injection drug use, sexual behavior, blood transfusions, and medical procedures).

Laboratory Testing

Blood samples were collected under sterile conditions. HIV screening was performed using rapid diagnostic test kits (e.g., Determine HIV-1/2), and all positive results were confirmed using Enzyme-Linked Immunosorbent Assay (ELISA) following national HIV testing guidelines.

Data Analysis

Data were coded and entered into [e.g., SPSS version 25.0] for analysis. Descriptive statistics were calculated for demographic variables and prevalence rates. The chi-square test was applied to examine associations between HIV status and selected risk factors. A p-value of less than 0.05 was considered statistically significant.

RESULT

Prevalence of HIV Infection

A total of 114 individuals were screened for HIV during the study period. Out of these, 6 individuals tested positive, resulting in an overall HIV prevalence of 5.3% in the sampled population.

Table 1: HIV Status of Study Participants

HIV status	Frequency (n)	Percentage (%)
Positive	6	5.3%
Negative	108	94.7%
Total	114	100%

Table 2: Age Distribution of HIV Positive Participants

Age Group (years)	Number of Positive Cases
⩽ 22	0
⩾ 23	6
Total	6

Gender Distribution

Out of the total 114 participants, 68 were male and 46 were female. All 6 positive cases were found among male participants.

Gender	Total tested	HIV positive (n)	Prevalence (%)
Male	68	6	8.8%
Female	46	0	0%
Total	114	6	5.3%

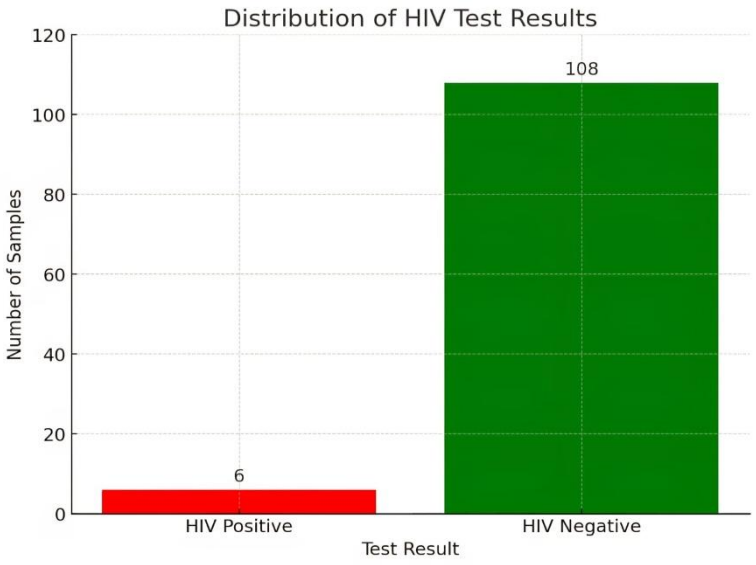

FIGURE 1 SHOWS THE PROPORTION OF HIV-POSITIVE AND HIV-NEGATIVE SAMPLES

DISCUSSION

This study examined the main risk factors for infection in this context and looked into the prevalence of HIV infection among those screened in Faisalabad. It is clear that the epidemic is concentrated in some metropolitan areas and high-risk populations because the observed prevalence of 5.3% is significantly greater than Pakistan's predicted nationwide prevalence (<0.1%) among the overall population (UNAIDS, 2022).

Males aged 23 and older accounted for all positive cases in this investigation, which is in line with other research that found greater infection rates in adult males as a result of particular risk behaviors (Ahmed et al., 2021; Saleem et al., 2019). People who inject drugs (PWID) exchanging infected syringes is a major cause of HIV transmission in Faisalabad and other similar metropolitan areas.

According to research, injecting drugs is still a major way for HIV to spread, and Faisalabad is one of Pakistan's districts with the highest rate of PWID-related HIV

transmission (Mann et al., 2014). Inadequate rehabilitation facilities, a dearth of needle exchange programs, and a lack of harm reduction services all lead to persistently dangerous injecting behaviors (Khan et al., 2020).

Unprotected sexual intercourse is another significant cause, especially for high-risk male populations. Numerous sexual partners, inadequate condom use, and a lack of awareness about HIV transmission channels are factors that have been linked to continuous transmission among Pakistani young and middle-aged men, according to studies (Ali et al., 2023). Without proper protection, migrant workers, truck drivers, and urban workers are frequently exposed to transactional sex, which contributes to the spread of new illnesses.

Furthermore, hazardous medical practices may contribute to the spread of HIV. Numerous local outbreaks have been linked to inadequate infection control in unlicensed clinics and the reuse of non-sterile syringes (Zafar et al., 2022). Because many people in low-income communities depend on unofficial healthcare practitioners, they are more likely to contract bloodborne illnesses.

Social stigma and a lack of understanding are still major obstacles. People are deterred from voluntarily seeking counseling and testing due to fear of discrimination, which postpones diagnosis and encourages silent transmission throughout communities (Murewanhema et al., 2022). This issue is made worse by Faisalabad's dearth of focused community education initiatives, especially for populations that may otherwise profit from early detection and care.

When combined, these elements show that dangerous injecting practices, unprotected sex, a lack of proper healthcare safety regulations, and social hurdles to testing and treatment are the main causes of the HIV epidemic in Faisalabad. These

results highlight the necessity of thorough harm reduction programs, easily accessible HIV testing and counseling, and strong awareness campaigns in order to lessen stigma and encourage safer practices.

Larger community-based samples should be used in future studies to examine more socioeconomic factors and understudied hidden communities. These enduring gaps might be filled in part by increasing community outreach and incorporating HIV services into primary healthcare.

CONCLUSION

The paper presents really new data regarding the prevalence of the HIV in Faisalabad city of Pakistan. The findings indicate that HIV is a significant concern about the local population health despite the fact that the health concern has been ranked as low prevalence infection countrywide.

It was revealed that the group disproportionately affected is males and young adults most so in the age groups of 25-34. The men frequency is higher than the women and this can be attributed to high-risk activities such as intravenous drug use and unprotected sexual intercourse that continue to be the primary source of infections in the region. As previous research in other cities in Pakistan indicates, there is still a need to focus on context-specific interventions as we have done in our findings.

Also, the study focuses on the role of the sociodemographic factors, including the low levels of education and ignorance in the spreading of HIV. Risk factors such as intravenous drug usage, unsafe sexual practice and uncontrolled transfusion of blood have been determined in a major way. This patients the tremendous necessity of harm reduction approaches, special education programs, and strict adherence to safe blood screening practices.

Even with the insightful information collected in the research, the research acknowledges its limitation. These are using or working with self-reported information on sensitive events that may underreport it and the small sample size which may not give an accurate representation of the large community of Faisalabad. Future research on the social and cultural influences on the risk of HIV within the community should enquire into those factors qualitatively and with larger and more diverse groups.

The conclusions that the study made point out the need to enhance voluntary counseling and testing programs, better local and national HIV monitoring, and specific health actions that involve high-risk groups. Community-based movements, comprehensive sexual health education and ways to alleviate stigma are needed to prevent additional spread.

To conclude, HIV remains a key health problem in Faisalabad. It will require an intricate plan involving the government agencies, health institutions, community leaders and the rest of the population to halt its transmission. To achieve this, the city of Faisalabad can work on the behavioral risks, awareness, and health systems to prevent the transmission of HIV and ensure better health results.

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