



HIV Awareness and Education Campaign for Teens

Mahendran Anujha, Murugapandi Navaneethaselvan, Siddiqui Munis Ahmed, Krishnasamy Gounder Ayyaswami Thamarai Krishnan, Kamchybek Kyzy Aselya

Department of clinical discipline -3, Osh State University, Osh, Kyrgyzstan.

ABSTRACT: -

One of the most significant worldwide health issues at the moment is HIV/AIDS, which poses a tremendous threat to teenagers and other susceptible groups. Viral propagation among adolescents is favoured by a lack of knowledge, misconceptions, and stigma around modalities of transmission and prevention. Even with so many educational initiatives, there are still a lot of knowledge gaps, particularly for underprivileged groups. The article explores about the Causes, pathogenesis, transmission, risk factors, clinical features, diagnostic approaches, treatment options and preventive measures that helps in understanding the HIV.

Key words: Understanding HIV, Life cycle and pathogenesis of HIV, Transmission, Risk factors, Symptoms, Diagnosis, Treatment options, prevention and latest research.

1. INTRODUCTION

Since its discovery in 1983, HIV has killed around 40.4 million people globally as of 2022. The staggering number of cases suggests that HIV could cause a global health emergency if left unchecked. However, the HIV pandemic has been lessened thanks to the creation, research, and broad availability of highly active antiretroviral therapies (ARTs). In a similar vein, advancements in HIV treatment and infection risk have normalized the illness as a chronic illness. HIV patients can lead long, healthy lives. This population is particularly concerned about preventing chronic illnesses because of the underlying immunodeficiency.

2. UNDERSTANDING HIV

HIV affects the immune system, particularly CD4 cells (T cells), which are essential for warding off infections. HIV can develop into the even more deadly acquired immunodeficiency syndrome (AIDS) if treatment is not received. Teenagers and young adults must be aware of the facts about HIV in order to prevent stigma and raise awareness.

3. LIFECYCLE AND PATHOGENESIS OF HIV

HIV attacks and kills immune system components called CD4 cells, sometimes referred to as CD4 T lymphocytes. White blood cells called CD4 cells are crucial for protecting the body from disease. HIV multiplies and spreads throughout the body using CD4 cell machinery. The HIV life cycle is the name given to this seven-step or stage process.

- **Binding:** The HIV virus binds to its host cell.
- **Fusion:** The HIV virus fuses with the host cell's membrane, allowing HIV contents such as RNA, reverse transcriptase, integrase, and other proteins to enter the cell.
- **Reverse Transcription:** Within the cell, HIV RNA is converted into DNA using reverse transcriptase.
- **Integration:** HIV DNA can be incorporated into host DNA thanks to the integrase enzyme.
- **Replication:** HIV can now produce long chains of HIV proteins, which can be used to produce more HIV.
- **Assembly:** Immature HIV is formed when HIV proteins and RNA travel to the cell's surface and assemble.
- **Budding:** Proteases convert immature HIV into infectious mature HIV after pushing immature HIV out of the cell.

3.1. The connection Between lifecycle of HIV and HIV medicine

Antiretroviral therapy (ART) is the use of several drugs for HIV to treat HIV infection. Every day, people on ART take a combination of HIV medications, known as an HIV treatment regimen. HIV medications strengthen the immune system by inhibiting HIV at various stages of its life cycle. Depending on how they combat HIV, HIV medications are categorized into various drug classes. A certain stage in the HIV life cycle is the focus of each class of medication. ART is particularly efficient at stopping HIV from spreading because an HIV treatment regimen comprises HIV medications from at least two different HIV drug classes. The immune system is shielded and HIV cannot progress to acquired immunodeficiency syndrome (AIDS) when there is less HIV in the body.

4. TRANSMISSION

HIV can only be acquired by direct contact with specific bodily fluids from an infected individual who has a detectable viral load. These liquids are:

- Pre-seminal fluid (pre-cum) and blood semen (cum)
- Fluids in the rectal cavity
- Fluids in the vagina
- Breast milk

HIV must enter an HIV-negative person's bloodstream by a mucous membrane (found in the mouth, rectum, vagina, or tip of the penis), an open wound or sore, or a direct injection (from a needle or syringe) in order for transmission to take place. Individuals with HIV can live long, healthy lives and prevent HIV transmission to their HIV-negative partners through intercourse if they take HIV medication as directed and maintain an undetectable viral load.

These modes of transmission should enable the teenager in making rightful choices in the relationship and health.

4. RISK FACTORS

The following conditions and behaviours increase a person's chance of acquiring HIV:

- Engaging in vaginal or anal intercourse without a condom;
- Harboring a different STI, such as bacterial vaginosis, chlamydia, gonorrhoea, herpes, or syphilis; abusing drugs or alcohol while engaging in sexual activity;
- When injecting drugs, exchanging tainted needles, syringes, and other injecting supplies, or drug solutions;
- Obtaining dangerous injections, blood transfusions, or tissue transplants; medical operations involving piercings or cuts that are not sterile; or unintentional needlestick injuries, including those sustained by healthcare professionals.

5. SYMPTOMS

Some individuals may experience flu-like symptoms, including fever, chills, or rash, within two to four weeks of contracting HIV. The duration of the symptoms could range from a few days to many weeks. HIV-related symptoms might also include sore throat, enlarged lymph nodes, mouth ulcers, muscle aches, and nocturnal sweats. You do not necessarily have HIV if you have these symptoms. The same symptoms can be caused by other conditions. In the early stages of HIV infection, known as acute HIV, some persons might not have any symptoms. The virus grows quickly during this initial phase of HIV infection. HIV continues to spread, albeit at a slower rate, after the initial stage of infection. For those not on ART, more serious HIV infection symptoms might not show up for years until HIV has progressed to AIDS. Because of their compromised immune systems, people with AIDS are more vulnerable to opportunistic infections. Opportunistic infections are infections and cancers associated with infections that affect persons with compromised immune systems more often or more severely than those with healthy immune systems.

6. DIAGNOSIS

Rapid diagnostic tests that yield results the same day can be used to diagnose HIV. This makes early diagnosis and its connection to prevention and therapy much easier. HIV self-tests are another way for people to test themselves. A certified and trained health professional or community worker must perform confirmatory testing because no one test can fully diagnose HIV positivity. Using WHO-prequalified assays in conjunction with a nationally authorized testing approach and algorithm, HIV infection can be identified with high accuracy.

The antibodies a person produces as part of their immune response to combat HIV are detected by the majority of commonly used HIV diagnostic tests. Antibodies to HIV typically form within 28 days after infection. People are in what is known as the "window period" during this time, when they have

low antibody levels that many quick tests are unable to detect, yet they can still spread HIV to other people. After 28 days, people who tested negative after a recent high-risk exposure can have another test.

To rule out any possible testing or reporting error, individuals should undergo additional testing after receiving a positive diagnosis before beginning treatment and care. Testing has become easy and effective for adults and adolescents, but not for infants born to mothers with HIV. Rapid antibody testing is insufficient to detect HIV infection in children less than 18 months; virological testing must be administered as early as delivery or at 6 weeks. There are now new technologies available. can conduct this test at the point of care and allow for same-day findings, which will expedite the proper connection between care and therapy.

7.TREATMENT OPTIONS

Modern Antiretroviral Therapy (ART)

People who have been diagnosed with HIV can live long, healthy lives because to modern treatment choices. The following are important ART facts:

- **Cuts Down on Viral Load:** By bringing the viral load down to undetectable levels, ART significantly reduces the risk of transmission to sexual partners.
- **Enhances Quality of Life:** Individuals living with HIV can prevent AIDS and preserve their immune systems with appropriate care.
- **The Key Is Adherence:** For treatment to be successful, medicines must be taken as directed on a regular basis.

8.STIGMA AND SOCIAL SUPPORT

Teens may be reluctant to disclose their status or seek care due to the stigma associated with HIV. Social support is essential to overcoming this:

- **Peer Education Programs:** Involving teenagers in awareness-raising and educational initiatives helps create a nurturing atmosphere.
- **Safe Spaces:** Promoting candid discussions about HIV and sexual health can aid in normalizing the virus's talk.
- **Community Involvement:** Local groups and schools can be extremely important in raising awareness and reducing stigma.

9.PREVENTIION AND PUBLIC HEALTH

HIV can infect anyone, but there are things you can do to prevent it.

- **Obtain an HIV test.** Before having sex, discuss HIV testing with your partner and get tested. To locate an HIV testing facility in your area, use the Centers for Disease Control and Prevention's (CDC) Get Tested locator.
- **Select less dangerous sexual practices.** HIV is primarily spread during anal or vaginal sex without the use of a condom or while not taking HIV prevention or treatment medications.
- **Every time you have sex, use condoms.** Learn how to properly use condoms by reading this fact sheet.
- **Don't have too many sexual partners.** You are more likely to have a partner with poorly managed HIV or to have a partner with a higher number of a sexually transmitted infection (STI) partners. HIV transmission risk can be raised by both of these circumstances.
- **Obtain an STD test and treatment.** Demand that your partners receive treatment and testing as well. You run a higher risk of contracting HIV or spreading it to others if you have an STD.
- **You should discuss pre-exposure prophylaxis (PrEP) with your healthcare physician.** For those without HIV who are at risk of contracting the virus (for instance, if your partner has HIV or you inject drugs), PrEP is an HIV prevention alternative. To lower the risk of contracting HIV through intercourse or injectable drug use, PrEP entails taking a particular HIV medication. PrEP drugs are administered as injections every other month or as pills to be taken daily. For PrEP to effectively protect you against HIV, you must take it as prescribed by your physician. Read the HIV info fact sheet on Pre-Exposure Prophylaxis (PrEP) for additional details.
- **Avoid injecting drugs.** However, if you do, only use sterile injection supplies and water, and never provide your supplies to anybody else.

10.RECENT ADVANCES AND RESEARCH

Researchers have gained a great deal of knowledge regarding the human immunodeficiency virus (HIV) and acquired immunodeficiency syndrome (AIDS) over the last few decades. To assist the millions of people whose health is still at jeopardy due to the global HIV/AIDS pandemic, however, further research is required. At the National Institutes of Health, the National Institute of Allergy and Infectious Diseases (NIAID) is in charge of the HIV/AIDS research program. On the NIH campus in Bethesda, Maryland, and at research facilities across the world, a wide network of scientists supported by NIAID are investigating novel approaches to HIV infection prevention and treatment, as well as gaining a deeper understanding of the virus

in order to discover a cure. For instance, NIAID and its collaborators have made strides in the search for an HIV vaccine in recent months. Research to better control and eventually stop the HIV/AIDS epidemic is also supported by other NIH institutes, such as the National Institute on Alcohol Abuse and Alcoholism and the Eunice Kennedy Shriver National Institute of Child Health and Human Development. Some of these researchers have discovered a straightforward and affordable method to reduce the spread of HIV from infected moms to their breastfed children. Others have created an index to quantify the contribution of alcohol use to HIV/AIDS-related illness and mortality.

11.CONCLUSION

Teen education and awareness are more important than ever as we strive to lower the prevalence of HIV. We can empower young people to make health-related decisions by providing them with accurate information on transmission, symptoms, testing, and treatment. By working together, we can lessen the stigma attached to HIV and foster a more accepting atmosphere for individuals who are impacted by the illness. We can provide the groundwork for a better, healthier future for everybody by being informed and compassionate.

12.REFERENCE

- 1.[Understanding HIV - National AIDS Trust.](#)
- 2.[The HIV Life cycle - HIV NIV Info.](#)
- 3.[HIV/AIDS Fact Sheet - World Health Organization \(WHO\).](#)
- 4.[Getting Tested For HIV.](#)
- 5.[HIV and AIDS: The Basics.](#)
- 6.[The methods explored by researchers to cure HIV](#)
- 7.[Advances in HIV/AIDS research | National Institute of Health.](#)