
UNIT 1 HOW TO PREVENT AND CONTROL HIV/AIDS

Contents

- 1.0 Objectives
- 1.1 Introduction
- 1.2 Need and Importance of Prevention
- 1.3 Prevention of Sexual of Transmission
- 1.4 Prevention of Transmission Through Blood and Blood Products
- 1.5 Prevention of Transmission from Mother to Child
- 1.6 Universal/Standard Precautions for HIV Prevention
- 1.7 Let Us Sum Up
- 1.8 Suggested Readings

1.0 OBJECTIVES

The aim of this unit is to help you to understand the importance of HIV/AIDS prevention as far as individuals from every walk of life are concerned. The lesson will also focus on the three modes of transmission and the steps to be taken for prevention at the personal level i.e. by the individual. After reading this unit you will be able to:

- state the need for prevention;
- state the various modes of transmission and the precautions required to be taken for prevention;
- describe how modification of the individual's behaviour can prevent the spread of HIV/AIDS; and
- understand the universal precautions for preventing of HIV/AIDS.

1.1 INTRODUCTION

In the previous block you read about the various modes/routes of transmission of HIV in detail. Understanding the process of passing on of HIV from one person to another will enable a person to protect himself/herself from this killer disease. This self knowledge will also help in planning and implementing programmes for the prevention and control of HIV/AIDS among individuals, groups and communities. The most effective HIV/AIDS prevention programme is the one that involves the behaviour modification of a person. Education for prevention is the only strategy that can reduce the AIDS epidemic.

1.2 NEED AND IMPORTANCE OF PREVENTION

There is an age old saying, "prevention is better than cure". There has always been this understanding that if the routes of transmission are known it should be checked or preliminary precautions should be taken so that there is no further

spread. HIV/AIDS is a disease, which spread and took the shape of a calamity because of certain unhealthy behaviour of the humans. As the cause of the spread and its precautionary measures are known this disease can be checked from spreading further.

There is no known cure for HIV/AIDS as yet. Therefore, once infected, the person will die of AIDS defining illness. At present, we have no vaccine which can untimely prevent us from getting infected. Doctors and medical scientists all over the world have tried to study the disease. They continue to do research to discover drugs that can cure the HIV/AIDS. They are also trying to develop a vaccine, which can prevent people from getting infected. But all these efforts have not produced any satisfactory result.

The HIV/AIDS has been in existence for over three decades now. Perhaps no other virus has undergone so much research as the HIV virus. Yet we have not achieved any breakthrough. Therefore, the only solution available for the prevention and control of this disease is proper awareness. This awareness should reach everyone across the country. There is a need to consciously develop a well designed HIV/AIDS education programme. Such a programme will aim at providing accurate and complete information on various aspects surrounding the AIDS disease. It will also aim at removing myths, misinformation and misconceptions about HIV/AIDS.

Education for Prevention

Prevention of further HIV infection is the only tool that is available with us to control this pandemic. Everyone has a right to information. Proper Education about HIV/AIDS will help people to protect themselves and others from infection by HIV. Education is the only medicine available in the world to contain the HIV epidemic. All preventive education programmes should offer much more than just information. While sharing information, they should also include the exploration of values and aim at development and practice of skills.

To educate people about HIV/AIDS/STDs, it is first necessary to overcome denial. Almost every country in the world, which has been faced with the problem of HIV infection, has first reacted by denial of the facts. This is true of many States even in India. In fact, there is an attempt by some people to hide the extent of the problem. Until we acknowledge the existence of the problem, changing risk behaviour of potential target groups will not be possible.

The Need of the Hour

What we require today is to contain the further spread of HIV/AIDS/ STDs. We also need to take care of those who are affected with HIV infection. Rehabilitation of the victims of HIV faced with social isolation is of utmost importance. Therefore, let us briefly discuss some of the preventive measures keeping in view the routes of HIV transmission and the potential target groups.

1.3 PREVENTION OF SEXUAL TRANSMISSION

There are several sections of the population who are highly vulnerable to HIV transmission. Given below are some of such vulnerable groups in our society:

Same Sex Activities

According to National AIDS Control Organisation, the term 'men who have sex with men' (MSM) is used to denote all men who have sex with other men as a matter of preference or practice, regardless of their sexual identity or sexual orientation and irrespective of whether they also have sex with women or not. MSM are highly vulnerable to HIV and are also a strategically important group for focusing HIV prevention programmes. As per the National Integrated Biological and Behavioural Surveillance (IBBS) conducted in 2014-15, HIV prevalence among MSMs was found to be 4.30 per cent.

(Source: <http://naco.gov.in/prevention-strategies>; accessed on October 31,2019)

HIV and Eunuchs

Our society is known for sheltering and promoting the third sex— the eunuchs. Very little research has been conducted on this group in India. But they are a large population consisting of over a million in India. However, available information shows that very few – not even one per cent eunuchs are born eunuchs in the country. There are exceptions. People do come into the world as blind, deaf, dumb, mentally retarded etc. Similarly, a very small percentage is also born without proper organs. Eunuchs mostly indulge in prostitution or begging. Unprotected sexual activity with multiple partners make them a high risk group for HIV.

Pre-marital Sex

Studies in India indicate that about 16 to 20 percent adolescent, street children and drug addicts engage in pre- marital sexual activities. This shows the extent of risk behaviour existing among the young people. It includes a sizeable population of children living in the streets.

Prisoners and HIV

Prisoners have a high prevalence of HIV infection and AIDS. HIV infection rates among this group are difficult to determine accurately due to various reasons. Intravenous drug use and homosexuality are the predominant risk behaviours commonly found in prisons.

Behaviour Modification

In the absence of a HIV vaccine, the safest and surest way to avoid new HIV infection is through behaviour change. Behaviour Modification aims to reduce high risk behaviour of individuals which make them and others getting infected with HIV. Behaviour intervention includes use of condoms, awareness generation, stigma reduction, access to services, decrease in sharing of contaminated injection equipment and limiting the number of sexual partners, especially among vulnerable groups of the society.

Condom Use

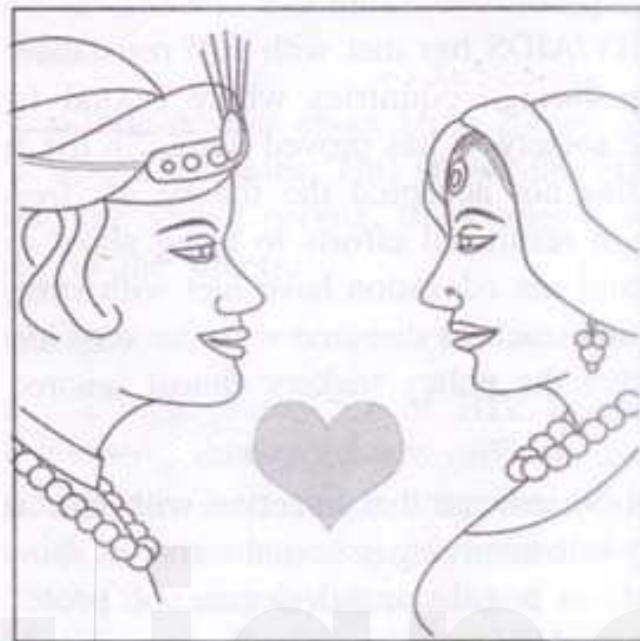
Studies across the world indicate that infection with HIV among people who use the condom while involving in sexual activities show that condom if used correctly offers a substantial degree of protection against acquiring HIV infection. HIV transmission, despite condom use is rarely attributable to a failure of the condom itself and is more often attributable to their incorrect use. Condom failure can occur due to breakage, leakage or improper use. Each of these types of failures can be minimized by the following techniques:

- Use a new condom for each act of intercourse
- Use latex condoms only
- Use a lubricant or pre-lubricated condom
- Usually condom will have a tip, bubble or nipple at the end to collect semen.
- A condom should be worn as instructed on the product. It should not be unrolled until placed on the head of the penis.
- Condoms that feel gritty or gummy should not be used. This indicates that the latex may have deteriorated.
- The condom should be held at the base of the penis immediately after ejaculation to prevent the condom from slipping while withdrawing from the penis.
- The spermicide nonoxynol -9 should be used alone for HIV protection when used with a condom. It may increase the protection afforded by the condom. Nonoxynol -9 is an ingredient found in many spermicidal contraceptive agents. It acts as a contraceptive by disrupting spermatozoa via its detergent characteristics. The observation that this commonly used spermicide also inhibited the growth of HIV in laboratory settings led to frequent recommendation advocating its use as a means of reducing the likelihood of transmitting HIV during sexual intercourse.

For those involved in sex work, same sex relationship, and those who want to risk their lives by indulging in sex outside marriage, condoms may be useful to some extent as recommended by experts on the subject. Some people and organisations promote condom as a lesser evil if the spouse (one or both) is infected.

HIV Prevention through Sexual Activities

The best ways to prevent the spread of HIV through sexual activities are:



- Educate yourself and your family members about HIV/AIDS; how it is spread and how to avoid it.
- Do not involve in unprotected sexual activities with multiple partners.
- Seek guidance from your parents, teachers and elders in your family.
- Life will be thrilling meaningful and joyful, if you can take care of yourself for some more time.

Check Your Progress I

Note: Use the space provided for your answer.

1) What are the best ways to prevent HIV through sexual activities?

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Needles and Surgical Instruments

Transmission of HIV from one person to another is possible through the use of un-sterilized needles, syringes and other skin-piercing instruments like surgical equipment.

In procedures involving surgical instruments, the instrument should be properly sterilized. If it is possible to use disposable instruments like disposable syringes and needles they should be used. The disposable instruments should be properly discarded.

Therefore, you should be careful in getting an injection from a hospital or health clinic. Carry a fresh disposable needle. That is the best way to avoid infection. Or you must ask the nurse or doctor whether the needle is a fresh and sterile one before they use it to inject you. One should ensure that a dentist takes adequate precautions when providing dental care and treatment to his/her clients.

While visiting a barber for a shave, carry a fresh blade, or ask the barber to use a fresh blade. While getting your own or your relative's ears or nose pierced, please ensure that a fresh and sterilized instrument is used. This is applicable to tattooing as well.

HIV through Blood Transfusions

HIV/AIDS is passed on to a person through blood transfusion with contaminated blood. A person can also get HIV through tissue and organ transplant. Anaemic persons may need blood transfusions. All these are routes for HIV to cross over to uninfected persons. Therefore, ensure that every unit of blood is screened for HIV before transmission.

Hemophiliacs and HIV

Hemophiliacs were found to be a principal group at the risk for HIV/ AIDS. As discussed earlier this group is at a higher risk to encounter a blood-borne pathogen because of the frequent blood transfusions and use of clotting factor. In 1989 the Medical and Scientific Advisory Council of the National Hemophilia Foundation (USA) released revised guidelines for therapy of hemophilia in order to reduce the transmission of HIV. The major recommendations were:

- Factor VIII products are heated for 10 hours at 60 degree C, or are detergent-solvent treated, or are monoclonal antibody purified, or are heated in suspension in organic media, or are dry heated at high temperatures.
- Viral-attenuated factor IX concentrate be treated with the methods described above for patient with factor IX deficiency.
- Fresh frozen plasma, a blood product containing clotting proteins, be used in factor IX deficiency with mild to moderate factor deficiency.
- *Decompression (DDAVP)*, a synthetic hormone that improves clotting should be used when possible with mild to moderate Hemophilia type A.
- Persons with on Von Willebrand's Disease (a different from of factor VIII) clotting disorder should be treated with DDAVP or cryoprecipitate from carefully tested donors. Patient with severe disease should receive processed factor VIII.
- Bleeding episodes should continue to be treated with appropriate clotting factor.

Therefore, you must make sure before blood, tissue and any organ is required to

be transfused or transplanted that the HIV status of the person donating the same is verified. Blood supplied from any blood bank including that of the Red Cross Society should be tested of HIV. Do not accept blood from a professional blood donor as many professional blood donors in India are found to be infected with HIV.

Injecting Drug Users

HIV/AIDS virus can be passed on to an uninfected person from injecting drug abusers. Needle sharing is a common practice among drug addicts. We already have thousands of HIV victims especially in the North-eastern states and some of the boarder states who have been infected through sharing needles.

Drug addicts also indulge in a lot of sexual activities. Through these sexual activities, these addicts can easily pass on the virus to their partners – either spouse or another person. It can also lead to the birth of an HIV infected baby. All these are undesirable activities, which are not approved by our families, religion and society. Therefore, let us try to prevent these unhealthy practices for the well-being of all of us. For those, who cannot manage, use of fresh needle is recommended. They should avoid needle sharing in anyway.

The efforts to reduce HIV transmission in drug users include implementing educational programs that explains the risks inherent in using contaminated equipment, replacing used syringes, legalizing syringe sales, providing antiseptics to treat needles before their use, implementing methadone maintenance programs, and providing primary drug treatment to wean the individual from his or her habit. No single approach is uniformly effective and the relative values of each of these different procedures are under evaluation.

Check Your Progress II

Note: Use the space provided for your answers.

1) What are the guidelines for therapy of Hemophilia in order to reduce transmission of HIV?

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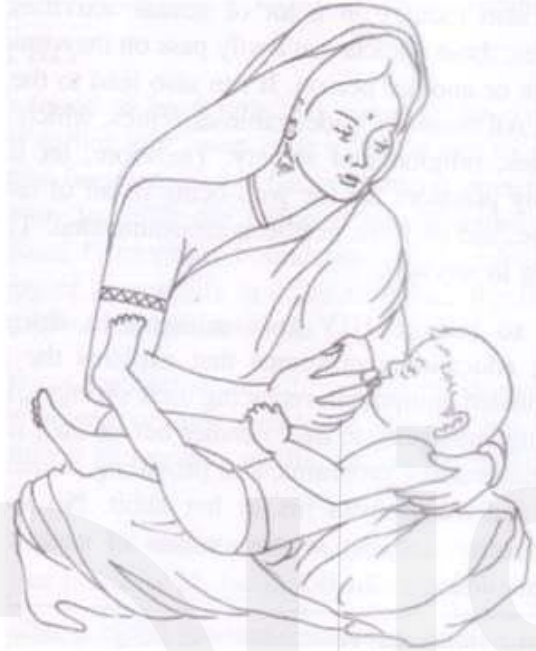
1.5 PREVENTION OF TRANSMISSION FROM MOTHER TO CHILD

Transmission of HIV can occur from an infected mother to her child during pregnancy, during the process of child birth or shortly after birth through breast milk.

- a) Transmission from an infected mother to her unborn child is estimated to be about 95 per cent of all pediatric AIDS cases. Among children born to HIV positive mothers, about 25 to 30 per cent are found to become infected with

HIV.

- b) Mother to child transmission occurs most often during the process of delivery. Today effective drug treatments are available to prevent mother to child transmission. Many interventions like avoiding instrumental deliveries, early tying of the cord and early bathing of the child can prevent mother to child transmission.



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- c) One must always go for available information on the risks associated with breast-feeding and HIV transmission. About 14 per cent of children get infected through breast-feeding. It should be a well thought out and joint decision by the parents to decide for artificial feeding that can replace breast-feeding for the child.

Drug intervention can prevent mother to child transmission. In 1994 researchers in the United States reported the result of a study on mother- to-child transmission of HIV (ACTG 076). The scientists found that when the antiretroviral drug zidovudine (AZT or ZDV) is given to HIV- positive women orally five times daily from the 14th week of pregnancy onwards, and intravenously during labour and administered to their infants for six weeks after birth, the risk of transmission of HIV to the child is reduced by over two thirds. The ACTG 076 regimen is now offered routinely to HIV-positive women in the industrialized world. However the regimen is costly, long and complicated to administer.

Since the treatment with the regimen was costly and time consuming various regimens that are cheap and effective have been discovered. Studies in Thailand showed that giving AZT from the 36th week of pregnancy gave the same protection as the ACTG 076 trial. In Africa, it was shown that a single dose of Nevirapine at the time of delivery and one dose to the baby 72hrs after birth prevented the transmission of the infection. Consult the local physician (specialist) on the regimen that is used in your area.

Other preventive measures include:

- HIV positive woman wanting to conceive, must seek counselling as well as well medical opinion (as well as the opinion of her religious leaders who can guide her towards an appropriate decision).
- Positive pregnant women shall not opt for an abortion and must seek medical opinion.
- She should opt for a caesarian section as it will prevent the child from getting infected during childbirth.
- As far as possible an HIV positive mother also should not breast-feed her baby. HIV can be passed on to the child from breast milk.
- WHO recommends HIV positive women in third world countries to breast-feed their babies. This recommendation should be followed by HIV positive mothers in India who are not in a position to provide artificial feeds to the babies mainly due to poverty.

We should be cautious about reading literature on HIV prevention imported from other countries. We should also be careful while reading material copied from western literature. There can be misleading messages. For example:

- We in India have very few single parents (particularly mothers) though there are a few exceptions.
- Women involved in lesbian activities hardly seek motherhood. Such a phenomena can hardly be found in India.

As mentioned in the beginning of this unit, education about HIV/AIDS/STDs and a good understanding of their various aspects can go a long way to prevent and control HIV. The best way to contain the virus is to be faithful to one's spouse and family.

Check Your Progress III

Note: Use the space provided for your answers.

1) What are the preventive measures for mother-to-child transmission of HIV?

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1.6 UNIVERSAL/STANDARD PRECAUTIONS FOR HIV PREVENTION

Until now we have studied the three direct methods through which there is a high possibility of getting infected by the virus. Universal precautions consist of a set of guidelines created to prevent the spread of diseases transmitted through body fluids, for the protection of caregivers and anyone with such diseases. These precautions were created primarily for medical professionals working in a hospital setting whenever they are likely to come into contact with blood or other body fluids.

The Centres for Disease Control (CDC), Atlanta, USA introduced universal precautions to emphasize that precaution must be taken when exposed to any blood or body fluids, because any patient could be infected, all blood must be treated as infected by any person handling or exposed to blood. These precautions also apply to other bodily fluids that are a potential source of HIV including semen, vaginal secretions, and tissue.

These universal precautions are now known as standard precautions. The change in the nomenclature has been brought about because these precautions have to be applied in all situations and have become the accepted standard of care. Universal precautions include the following practices:

- 1) Treat every patient as **potentially infected**. (By the time a patient is diagnosed as HIV positive almost 50% of blood investigations may be over.)
- 2) Hand washing with soap and water between each patient contact. Hands should always be washed before and after contact with patients. Hands should always be washed even when gloves are worn. If you accidentally touch blood or other bodily fluids, thoroughly wash the hands.
- 3) Use of disposable gloves if body fluids are contacted and double gloves during surgical procedures. Those with open skin lesions should not perform procedures if they are exposed to body fluids.



- 4) Wearing of gowns when clothes may be exposed to body fluids.
- 5) Wearing of masks and eye wear when performing procedures that may splash the worker with body fluids.
- 6) Sharp instruments should be disposed of in puncture – resistant containers immediately after use. Needles should be disposed of immediately after use without recapping. **Disposal containers should be placed in all areas where sharp objects are used.**

HIV Prevention and Health Care System

No health care worker has been reported to have been infected with HIV infection through casual contact while taking care of infected patient. Till 2000 there have been 57 documented cases of HIV transmission to the health care workers from percutaneous exposure. The registry was stopped in 2000 because the infection rate was low.

There have been no cases where a HIV infected health care worker has infected a patient. (In 1990 a dentist in Denver, transmitted HIV infection to six of his patients. The method used by the dentist is not known.)

Although the risks from HIV infected health care patients are very low, the CDC issued recommendations in 1991 to reduce the risks even further. The recommendations include:

- 1) Health care workers who perform invasive procedures should know their HIV status.
- 2) HIV-infected health care workers should:
 - i) Avoid performing invasive procedures that involve significant exposure to body fluids and that pose a clear risk of HIV transmission. These procedures include those that present a risk of a puncture wound to a health care worker and contact of the health care worker's blood with the patient's body cavity, tissues beneath the skin or mucous membranes.
 - ii) Seek opinion from an expert panel on which an invasive procedure will be conducted of his or her infection.
- 3) HIV-infected health care workers approved for conducting invasive medical

procedures should inform the patient on whom an invasive procedure will be conducted of his/her infection.

- 4) Mandatory testing of health care workers is not warranted because of the low risk of transmission and the expense of conducting a screening programme.
- 5) A pregnant health care worker limiting her interaction with HIV-infected persons to casual contact runs no increased risk of HIV infection for either herself or her child. Patient with HIV/AIDS are infected with other micro-organisms such as cytomegalovirus that are more readily transmissible than HIV. The possible transmission of these other agents prompts recommendations by some that pregnant health care workers to limit their exposures to AIDS patients and avoid direct involvement in their care.

Prevention of Infection after an Accident in Hospital

If a health care worker gets accidentally injured, he/she can be protected against the dangers of acquiring the infection. Most of the injuries that occur are due to needle stick injuries. These can be prevented if they are careful and follow the procedures diligently. If they get a needle stick injury, bleeding from the wound should be encouraged. The wound should be washed with water and an antiseptic (not dettol or quaternary ammonium compounds).

The injury has to be assessed by medical personnel. If it is not known then patient should be checked for the infection after obtaining his/her consent. If the patient refuses consent the test can be done without the consent of the patient. This is legally permitted as it poses a threat to an uninfected person. Consult your doctor for the drugs. If a healthcare worker gets an injury from an infected patient, he should get his blood tested immediately and it should be repeated after an interval of six weeks. If the first test is negative and the second test is positive then the injury can be attributed to cause the infection.

Check Your Progress IV

Note: Use the space provided for your answer.

- 1) What are the universal precautions to be followed for preventing HIV transmission?

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1.7 LET US SUM UP

The introductory part of the unit gave an idea about the situation of the rising HIV/AIDS cases and how prevention methods are important. The unit then focused

on the various modes of transmission and how prevention at the personal level can put a check in its spread. The lesson emphasised the importance of how prevention of HIV/AIDS can be managed by the individual through behaviour modification and by upholding ethical values. The unit ended with some universal precautions, which should be followed by the person taking care of the HIV/AIDS patient.

1.8 SUGGESTED READING

Frumkin, Lyn and Leonard, John (1994), *Questions and Answers on AIDS*, PMIC, Los Angeles.

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