
UNIT 1 TRANSMISSION OF HIV THROUGH SEX

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1.0 OBJECTIVES

The aim of this lesson is to create awareness about the transmission of HIV through sex. This will give us ideas on how to avoid various types of risky sexual behaviour.

After studying this unit, you will be able to:

- know how HIV is transmitted through sex;
- analyse the factors responsible for the risk of becoming infected;
- state various vulnerable sections of population who indulge in risky sexual activities; and
- interpret the relationship that exists between the modes of transmission and carriers of HIV through sex.

1.1 INTRODUCTION

There are several ways in which one can get infection with HIV. It is very important to know the routes of HIV transmission. This will help us to avoid the spread of HIV. In other words, understanding how HIV passes from one person to another will enable us to protect ourselves. It will also help us to plan and implement programmes for the prevention and control of HIV/AIDS.

Persons infected with the HIV can pass on the virus to those who are not infected. Most transmission occurs from patients who are without symptoms of AIDS. Therefore, it is essential that everyone is aware about the transmission of HIV. It is also important to know who can get infected and how one can get infected. HIV is present in all body fluids, tissues and organs. HIV has been found in almost all body fluids like blood, genital secretions, (semen, cervical and vaginal) saliva, tears and breast-milk. The HIV/AIDS virus can pass on to an individual through three routes. These are:

- i) Sexual exposures;
- ii) Contact with HIV/AIDS contaminated blood and blood products; and
- iii) Mother to child through pregnancy or childbirth.

In this unit, let us examine how HIV spreads among people through risky sexual exposure.

1.2 MODES OF TRANSMISSION THROUGH SEXUAL ACTIVITIES

Sexual activity, whether homosexual or heterosexual, is the major route of transmission of the HIV throughout the world. The virus can be transmitted by any penetrative sexual act in which HIV-infected semen, vaginal or cervical secretions or blood is introduced into the body through a break in the mucosa. The sexual activities where this type of transmission occurs include:

- a) Penetrative penile – vaginal intercourse;
- b) Penile – anal intercourse; and
- c) Oral – genital contact.

Detailed epidemiological studies throughout the world have documented that sexual transmission occurs through exposure to semen and vaginal or cervical secretions. Exposure to any of these fluids may also occur during other sexual activities.

The precise risk of HIV transmission from a single act of sexual activity is not known. Population-based estimates suggest that the extent of risk through penile-vaginal or penile-anal contact is generally less than one infection per hundred exposures. However, such statistics describe the average within a group of people and cannot be applied to an individual case. While some people have had multiple sexual contacts with infected persons without acquiring HIV infection, others have become infected following a single sexual encounter. Repeated sexual activity with an infected person increases the risk of infection. Let us discuss various types of sexual activity and the risks involved in transmitting HIV during those acts.

Penetrative Penile-Vaginal Intercourse

This is the most common form of sexual activity. Transmission of HIV from men to women and from women to men is well documented. However, transmission rate through heterosexual contact is reported to be high among females.

The transmission from men to women is fairly well understood. Semen from an infected man contains HIV that is most likely associated with infected lymphocytes. HIV introduced into the vagina must make its way into the lymphatic to initiate viral reproduction. Small breaks in the linings of vagina are presumed to be portals of entry to the lymphatic. Women are more susceptible to infection than men after a single exposure to HIV. This difference may be because the vaginal mucosa has a larger surface area and the vagina acts as a vessel for the seminal secretions. The seminal fluid has a greater contact time with the vaginal mucosa. Moreover, small cuts or break in the mucosa go unnoticed.

Other factors that increase the transmission during the sexual act are the presence of ulcers on the male and female genitalia. Women who have infections in their pelvic organs are more prone to develop infections. Chemical irritation of the vaginal mucosa that occurs due to use of barrier contraceptives may increase the chance of the women getting infected. Although male to female transmission clearly occurs, the means of transmission of HIV from women to men is less clear.

Penile-Anal Activity

This means penetration of penis into the anus. It appears to be the primary means by which HIV is transmitted among men having sex with men. This is sometimes referred as rectal activity and in turn often leads to breaks in the lining of rectum. The rectal mucosa is delicate. These breaks in the rectum linings make it easier for HIV to enter into the lymphatic. Laboratory studies suggest that cells that line the rectum may also become directly infected with the virus.

Male to male transmission through anal intercourse occurs at the rate of one infection per 10 sexual acts. Surveys of the homosexual populations indicate that a partner who inserts his penis in to the anus of another partner (active partner) seems to have a lower chance of becoming infected when compared to the partner into whose anus he has inserted (passive partner). When these activities are performed without any physical barriers, it must be considered as high risk for transmission of the virus.

Usually penile-anal activity is not recommended even between a mutually faithful husband and wife on health grounds. It is against dignity for the man to force his wife to agree for penile-anal sex against her will. Every human act whether in public or private has its implications on the behaviour and character of the individual. One must have regard and respect for every human being including a sex worker. Dignity and worth of the individual must be given utmost importance.

Oral-Genital Contact

This means contact between the mouth and genitals. The role of oral-genital sex as a route of transmission of HIV is poorly studied in populations other than homosexuals. It is because individuals who engage in oral genital sex rarely do so to the exclusion of other forms of sexual contact. It is difficult to attribute transmission of HIV to oral sex and not to other types of sexual exposures.

The possibility of transmitting HIV from the vagina to the mouth seems possible, although it is not documented. Similarly, the feasibility of transmitting of HIV from the mouth to the genitals is unclear. One can speculate about plausible routes of transmission in any type of oral-genital contact. HIV bearing lymphocytes present in semen could contact damaged mucosa in the mouth and allow the entry of HIV into tissue. Likewise, traces of menstrual blood or vaginal discharge containing HIV could serve as conduct of infection from the genitals to the mouth. Virus is shed in the saliva. Saliva is not infective as the dose of virus needed to transmit the infection is very low. Saliva also contains an enzyme that inhibits the virus. Hence, it does not easily transmit the infection.

Oral sex is very rare amongst most people in the Indian sub-continent for various reasons. Some of these include:

- i) Lack of adequate privacy. Almost 70 per cent people live in rural areas in small houses along with several family members (children, joint family, etc.) where privacy for intimate sexual activities is limited.
- ii) Almost half the populations in most urban areas live in slums which comprise a small room without any privacy and safety.
- iii) Most men and women from the above mentioned categories return home tired and wanting rest after a day's work. They eagerly wait for darkness to set in so that their sexual urges can be satisfied in fleeting moments.
- iv) Most people in India are not exposed or oriented to various forms of sexual activities described above due to their family, cultural, religious, educational, traditional and social background.
- v) Husband and wife hardly talk to each other on sex and sexuality.

It may be noted that very few studies have been conducted on the sexual behaviour of people in India. Therefore, most of the concerns discussed in this unit may not be relevant for most people. However, adequate information on various aspects with regard to sexual activities which are risky in nature need to be made known so that the last person in the country is enabled to take necessary precaution to void transmission of HIV/AIDS/STDs. Twenty first century is witnessing unprecedented development in technology. Through social media network one is exposed to all types of pornographic activities that influence young minds. As a result, approaches to sexual behaviours changes cannot be ruled out.

Check Your Progress I

Note: Use the space provided for your answers.

1) Describe how HIV transmission occurs through sexual activities.

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1.3 FACTORS RESPONSIBLE FOR CAUSING INFECTIONS

Some of the risks of becoming infected with HIV as a result of sexual activities include:

- i) Whether the sexual partner is infected;
- ii) The type of sexual contact involved;
- iii) The amount of virus present in the blood or secretions of the infected partner; and

- iv) The presence in either partner of other sexually transmitted diseases or genital lesions.

Probability that Sexual Partner is HIV Infected

The prevalence of HIV infection among sexually active people varies in different areas and among population sub-group in those areas. The probability that a person has acquired a sexually transmitted HIV infection is, in general, proportional to the number of sexual partners the person has had in recent years. In areas where the mode of transmission is through heterosexual activity, the higher prevalence of infection has been found among female sex workers. The probability in such cases increases.

The probability of a homosexual man encountering an HIV infected sexual partner ranges from a few per cent for those with only a few male sexual partners in areas of low HIV/AIDS prevalence to several fold for men who have many sexual partners in areas of high HIV prevalence. Unlike several permissive societies in the world, the percentage of homosexuals and lesbians in India are significantly less. However, we do have reported cases of the prevalence of HIV among the minority homosexual population of the country having different sexual orientation.

Type of Sexual Contact Involved

Sexual Intercourse

All forms of sexual activity in which any type of contact with body fluid is involved carries a risk of HIV transmission. While existing data suggests differences in the relative risk of various forms of activity, the precise level of risk associated with each is not yet known. Trauma to the mucous membrane of the rectum or vagina may facilitate transmission of HIV, but is not essential for transmission to occur.

The highest risk for HIV infection occurs amongst men and women who engage in receptive anal activity with an HIV-infected partner. Vaginal intercourse carries a higher risk for heterosexual men and women than oral activity. Oral-genital contact may transmit HIV, but the available data are too limited to permit quantification of the risk from such contact.

Kissing

Kissing has been shown to pose a risk of transmission in some cases. Nevertheless, while not substantiated, there is a theoretical risk of HIV transmission during 'wet kissing' in which saliva is exchanged and if there are cuts and pores in the mouth.

Masturbation

Self-masturbation obviously poses no risk of HIV transmission. However, mutual masturbation, which may involve exposure to semen, or cervical and vaginal secretions, may pose a theoretical risk of HIV transmission if there are cuts, wounds etc. in parts of the body, which may be exposed to such body fluids.

Amount of Virus Present in the Blood or Secretion of the Infected Partner

HIV infected individuals are thought to become more infectious as they progress to overt disease i.e. AIDS. Similarly during the window period the concentration of HIV is the highest and the person is highly infectious. Therefore, exposure during window period can be highly risky.

Presence of other Sexually Transmitted Disease (STDs)

There is increasing evidence that the presence of another sexually transmitted disease in one or both partners may increase the risk of HIV transmission. Genital ulceration may occur with chancroid, syphilis or herpes virus infection. Ulcerative disease appears to increase the susceptibility to infection of uninfected individuals and to enhance the infectivity of those who are already infected.

Commercial Sex Workers

It is always risky to have sex with Commercial Sex Workers (CSWs) in India. Reports indicate that most of the sex workers suffer from STDs and a large number of CSWs are also found to be HIV infected across the country. The only way to avoid HIV is to remain faithful to one partner or practice abstinence. Sex education is the need of the hour.

Check Your Progress II

Note: Use the space provided for your answers.

- 1) Describe in brief about the various risk factors involved in the transmission of HIV through sex.

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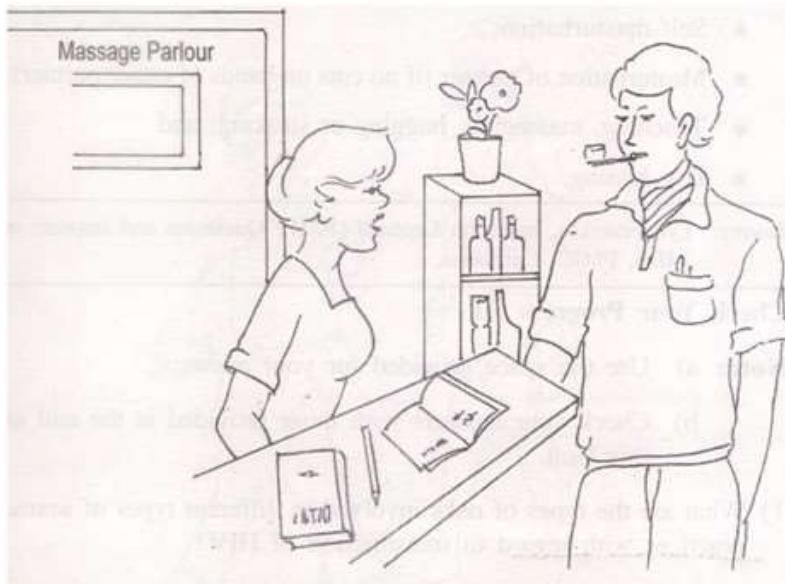
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1.4 HIV TRANSMISSION RISKS FOR DIFFERENT PRACTICES

In the previous sections we discussed various factors responsible for transmission of HIV. In this subsection we have presented risks involved in the transmission of HIV for difference practices in a tabular form. Different types of practices are grouped under four categories. Unsafe practices with high risk, unsafe practices with unclear risk, low risk practices with some risk and practices with probably no risk.



HIV Transmission Risks for Different Sex Practices*

- 1) Unsafe practices with high risk of HIV transmission:
 - Numerous sex partners;
 - Unprotected anal receptive sex with an infected partner;
 - Unprotected anal penetration with hand (fisting);
 - Anal douching in combination with anal sex;
 - Oral-anal contact; and
 - Vaginal intercourse without a condom with an infected partner.
- 2) Possibly unsafe practices with Unclear Risk of HIV Transmission:
 - Fellatio (Oral contact with male genitals and contact with semen);
 - Cunnilingus (Oral contact with female genitals); and
 - Sharing sex toys and implements.
- 3) Low Risk Practices with some Risk of HIV Transmission:
 - Anal or vaginal sex with proper use of intact condom;
 - Wet kissing (French kissing); and
 - Fellatio interrupts (contact with male genitals without ejaculations)
- 4) Practices with Probably No Risks of HIV Transmission:
 - Abstention from sexual contact;
 - Monogamous relationship in which both the partners are uninfected;
 - Self-masturbation;
 - Masturbation of partner (if no cuts on hands of either partner);
 - Touching, massaging, hugging or stroking; and
 - Dry kissing.

* Source: Lyn Frumkin, and John Leonard (1994): Questions and answers on AIDS, PMIC, California.

Check Your Progress III

Note: Use the space provided for your answers.

1) What are the types of risks involved in different types of sexual practices with regard to transmission of HIV?

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1.5 VULNERABLE POPULATION

Sex Workers or Prostitutes

The HIV virus is primarily transmitted from one person to another through sexual activities. There are various categories of persons who are vulnerable to HIV infection through sexual contacts. In every culture, and society one does come across sex workers. They are mostly women who sell their bodies for a price (money). Some men may also involve in male prostitution. There are various forms of sex work:

i) Organised Sex Work

In big cities and towns, they live in certain areas known as Red Light Areas or Red Light Districts. Women who practice prostitution live in groups in such areas. There are also sex workers who live in brothels. Brothel keepers may keep them in brothels by force. They have no freedom to go out of the brothel premises. Very often they have to provide sexual satisfaction to several men in a day.

ii) Call Girls



The second category is call girls. Call girls are those who live a more comfortable life. They usually serve customers in their homes or hotels and earn handsome amount.

iii) Certain Tribals

Another category comprises women from some of the tribal communities who practice prostitution as means of livelihood and as their traditional practice. Some of these tribes are Rajnat, Bediyas, Gadia, Lohares, Kanzars, Bheel etc. Most of these tribes are found in Rajasthan and some other north Indian states who mostly stay along the Highways.

iv) Religious Traditions

There is also another group of young girls who are called Devadadis. These are young girls usually from very poor families who are offered to temples. Almost always, these dancing girls are sexually exploited and they also become sex workers later in their lives. It is a common practice in northern parts of Karnataka and several other states in India.

Same Sex Relationships

Same sex sexual relationships are very high-risk activities. In fact, the very first cases of HIV were found among people involved in same sex relationships. This trend continued in the United States of America until recently. Oral penetrative sex as well as anal penetrative sex are high-risk activities. This causes bleeding and breaks in the mucosa or the skin covering the sex organs. In case of oral sex, sex organs get hurt with the teeth. In case of anal sex, penetration becomes painful for both active and passive partners, as the anus cannot receive an erect penis. In the process, both the penis as well as the rigid rectum suffers injuries or tears causing bleeding as well as transmission of HIV/STDs.

Several reports reveal that a passive partner is very often forced into doing a particular sexual act. Sex can never be enjoyed by force. It then becomes cruel or sadistic act done without concern for the dignity of the individual. Several cases of homosexual rape have been reported.

Same sex relationships are commonly found in:

- i) Massage parlors
- ii) Hostels where people of the same sex live
- iii) Prisons
- iv) Welfare Institutions taking care of clients belonging to same sex like Nari Niketan, Beggar's Home, Juvenile Homes, Orphanages etc.
- v) Camps of armed forces
- vi) Among street children
- vii) Among child laborers kept in camps; and
- viii) Circus camps etc.

Eunuchs

Involvement of eunuchs in the flesh trade is not a new phenomenon in any country. They are a high-risk group in India today. They are estimated to be over one million in India. They run brothels that serve particularly the homosexuals and also cater to bisexuals.

Sperm Donors

There are some documented cases from various parts of the world where HIV has been transmitted through artificial insemination. People who donate sperm can also pass on HIV if they are infected. There are several sperm banks located in various parts of the country. The usual donors of the sperm in the country are poor labourers, beggars or street vendors who make a living out of it. Many drug addicts also donate sperms for a price to buy drugs. There are also reports of students from some of the professional colleges and educational institutions who donate sperm for making additional pocket money.

Check Your Progress IV

Note: Use the space provided for your answers.

- 1) Explain briefly same sex relationship in the context of HIV transmission.

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1.6 LET US SUM UP

In this unit various means of transmission of HIV through sex is discussed. Sex is one of the known sources of HIV transmission. This is also the largest mode of transmission. This mode of transmission generally occurs in three ways.

These three ways are: Penetrative penile-vaginal, penile-anal and oral-genital contact. Amongst these three ways penetrative penile-vaginal activity is the most common. In penetrative penile-vaginal activity, transmission from male to female is known.

The risk of becoming infected with HIV as a result of sexual intercourse depends upon mainly four factors. These are: (a) Whether the sexual partner is infected; (b) the type of sexual contact involved; (c) the amount of virus present in the blood or secretions of the infected partner; and (d) the presence in either partner of other sexually transmitted diseases or genital lesions. The unit also discusses about HIV transmission risks for different types of sexual practices. These are: (1) unsafe practices with high risk of HIV transmission; (2) possibly unsafe

practices with unclear risk of HIV transmission; (3) low risk practices with some risk of HIV transmission; and (4) practices with probably no risk to HIV transmission.

In the last section of the unit, various groups vulnerable for HIV transmission through sex are discussed. These vulnerable groups of population include sex workers, homosexuals, lesbians, eunuchs, sperm donors etc.

1.7 SUGGESTED READINGS

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

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