CHAPTER – I

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According to global HIV and AIDS epidemic published by UNAIDS in November 2010, people living with HIV/AIDS in 2009 are estimated to be 33.3 million and among whom 30.8 million are adults. Around 1.8 million people died due to AIDS in 2009. NACO Annual report 2010-2011, based on HIV Sentinel Surveillance 2008-09, mentions that there are 23.90 lakhs people infected with HIV/AIDS in India with an estimated adult HIV prevalence of 0.31%. Out of which 39% are female and 3.50% are children. Almost all parts of the world population are being affected by this dreadful disease, AIDS. The most affected group is adolescents of the age group 10-19 years. Adolescent shares about 18% of the world population (United Nations Department of Economic and social affairs, population division world population prospect: the 2008 revision). More than 22% of Indian population is in adolescent age group 10-19 years.
Counseling and Testing centers across the countries during 2009-2010 (NACO Annual Report 2009-2010) shows that 87.10% of HIV infections are still occurring through heterosexual routes of transmission, while parent to child transmission accounts for 5.40% of HIV cases detected, Injecting drug use accounts for 1.60%; man who have sex with man accounts for 1.50% and contaminated blood and blood products accounts for 1%.

1.1 The Problem

It has been found that adolescents of the age group 10-19 years are the most affected by HIV/AIDS. This is due to physical, psychological and emotional changes which disturbs the adolescents. They generally fall into unwanted sexual activities and substance abuses that may cause HIV infections. One of the remedy to this dreadful disease is to provide information about sexuality and adolescents’ reproductive health needs to the people so that they can protect themselves. Education is the only medium through which people can be informed regarding various social issues. To get success in such a mission the first step is to equip the stakeholders i.e. parents, teachers and students regarding various ways and means of protection from HIV infection.

Attempts were made under the name ‘sex education’. Due to the cultural taboo the term sex education has been replaced by Adolescence education. National Seminar on Adolescence education held in April 1993 organized by NCERT recommended the introduction of adolescence education in the school curriculum. Some of the States like Orissa have already started adolescence education program in school curriculum while states like Maharastra are against the introduction of adolescence education in school curriculum. Manipur being one of the most HIV infected states, it is essential to provide proper information to masses regarding ways and means of protecting themselves from this dreadful disease.

An Account of HIV/AIDS

HIV (Human Deficiency Virus) is the virus that causes AIDS (Acquired immunodeficiency Syndrome), a condition in human beings which progresses to failure of the immune system that allows life-threatening opportunistic
infection and cancer to thrive. HIV infection in human is considered as pandemic by World Health Organization. HIV touches the lives of children and families in every country in the world.

The major route of HIV transmissions are:
(i) Unprotected sex with HIV infected person
(ii) HIV infected mother to her baby during pregnancy, child birth and breast feeding
(iii) Through blood from HIV infected contaminated syringe, needle, and sharp instruments, transfused with HIV contaminated blood and body fluid.

Although HIV is still incurable but treatment with antiretroviral drugs reduces both the mortality (dead) and morbidity (illness) of HIV infection. Antiretroviral drugs are expensive and the majority of the world’s infected individuals do not have access to medication and treatment for HIV and AIDS. Due to limited sources of antiretroviral medication available universally, giving awareness and educating about the causes, modes of transmission and consequences will help in prevention of this dreadful disease. Younger people are more vulnerable to sexually transmitted HIV as well as drug abuse. They need to be educated about the cause, the implication and the ways of contracting the dangerous disease. Sex education and awareness programs would help in prevention of the disease. To have a comprehensive control on HIV/AIDS, governments, with support from family, community and non government and religious organizations need to respond to ensure people’s right to information on HIV prevention, treatment and care.

**Etiologic Agent (Causative Agent)**

HIV the etiologic agent of AIDS belongs to the family of human retrovirus (retroviridae) and the sub family of lentivirus. The HIV virion is an icosahedral structure with the diameter of about 120 nm. HIV is surrounded by a coat of phospholipid known as the viral envelop or membrane containing numerous external spikes formed by the major enveloped protein, the external gp120 and the transmembrane gp41. Below the viral envelop, there is the matrix which is made from the protein p17.
The protein gp120 and gp41 together make up the spikes that project from HIV while p17 forms the matrix and p24 forms the core. Inside the core there are three enzymes required for the HIV replication called reverse transcriptase, integrase and protease. Also held within the core is HIV’s genetic material which consists of two identical strands of RNA.

HIV Life cycle

Entry

HIV begins its life cycle only inside human cells. The process starts when virus enters in the body and sticks the spikes of the surface of the virus to the CD4 + (Cluster of differentiation 4 is glycoprotein present on the surface of WBC act as function as co-receptor assisting in T cell receptor with an antigen-presenting cell) T lymphocyte of the host. The virus then fuses with the host cells. After the fusion the virus releases RNA, its genetic materials into the host cell.

Reverse Transcription and integration

Once inside the cell the HIV enzyme reverse transcriptase converts the single stranded RNA into double stranded HIV DNA which is compatible with human genetic material. This HIV DNA is transported to the cells nucleus where it is spliced into the human DNA by HIV enzyme integrase. The integrated HIV DNA is called as Provirus. The provirus may remain inactive for several years within the cell.
Transcription and translation

When the host cell is activated, the provirus acts same as the human genes. The provirus uses the host enzyme called as RNA polymerase to create copies of the HIV genomic materials as well as shorter strands of RNA called messenger RNA (mRNA). The mRNA is transported outside the nucleus as blue print to make long chain of HIV protein.

Assembly

The long chain HIV protein formed is cut into smaller individual protein by presence of HIV enzyme called Protease. As the smaller HIV protein come together with copies of HIV’s RNA genetic material a new virus particle is assembled.

Budding

The newly assembled virus pushes out (buds) from the host cell. During budding the new virus steals part of the cell’s outer envelope. This envelope form covering of the virus is studded with protein/sugar combination called as HIV glycoprotein. These glycoproteins are necessary for the virus to bind CD4+ cell on its receptors. The newly matured copies of HIV are ready to infect other cells and begin the replication process all over again. In this way the virus spreads through the human body and once a person is infected they can pass HIV on to others in their bodily fluids.

Transmission of HIV

HIV is transmitted when the virus enters the body through various routes-

1) Sexual Transmission –

HIV is present in the infected seminal fluids in male and cervical and vaginal fluids in female. HIV is transmitted by having sex with an infected partner. The virus can enter the body through the lining of the vagina, vulva, penis, rectum or mouth. Broadly sexual transmission can be divided into Homosexual (male sex with male and female sex with female) and Heterosexual (male sex with female).

As per sexual practices it can be divided into---

i) Anal sex  (ii) Vaginal sex  (iii) Oral sex
Out of the three sexual practices, the highest incidence of transmission occurs in anal sexual intercourse. Vagina mucosa has several layers thicker and less likely to be traumatized during intercourse but can be transmitted to either partner through vaginal intercourse. The rate for receptive anal intercourse is much higher 1.70% per act relative to vaginal intercourse. In heterosexual transmission male to female transmission appears 8 times more efficient than female to male transmission. This is due to prolonged exposure to infected seminal fluid of the vagina and cervical mucosa as well as in the endometrium (inner most layer of uterus) whereas the penis and urethral orifice are exposed relatively briefly to infected vaginal fluid. In developed countries, the risk of female to male transmission is 0.04% per act and male to female transmission is 0.08% per act. These rates are 4-10 times higher in developing and under developed countries. Among males, uncircumcised male partners have higher risk of HIV infection than circumcised male partner. This difference may be due to increase susceptibility of uncircumcised men to ulceration STDs as well as others factor such as micro trauma that occurs during the sexual acts. In addition the highly vascularised foreskin tissue contain a high density of langerhans cells as well as increase number of CD4+ T cells, macrophages and other cellular targets for HIV. Finally the moist environment under the foreskin may promote the presence and persistence of microbial flora which via inflammation may lead to even higher concentration of target cell for HIV in the foreskin. Oral sex is much less efficient mode of transmission of HIV than anal and vaginal intercourse.

2) Transmission by blood and blood products-

HIV can be transmitted to individuals who receive HIV infected blood and blood products. It is estimated that 90-100% of individuals who were exposed to such HIV contaminated products become infected. HIV can also be transmitted to IDUs (injecting drug users) while sharing injection paraphernalia such needles, syringes, the water in which drugs are mixed or the cotton through which drugs are filtered. All injections (i.e. intravenous, intra-arterials, intra-articular, intramuscular, subcutaneous, intradermal, intrathecal) involve risk in transmission of HIV.
3) Transmission through accident

HIV can be transmitted in health care workers – nurses, laboratory workers, doctors through accidental needle stick or contact with contaminated fluid and also to people giving and receiving tattoos, piercing and scarification procedures.

4) Transmission through organ transplantation

HIV can be transmitted when organ from infected donor are transplanted into an uninfected recipient.

5) Mother to child transmission

Transmission of HIV can occur from an HIV positive mother to her child during pregnancy, labor, and delivery called as Vertical transmission and with breast feeding. In the absence of prophylactic antiretroviral treatment, the probability of transmission rate up to birth between the mother and child is around 15 to 25% in industrialized countries and from 25 to 35% in developing countries. These differences may relate to the adequacy of prenatal care as well as to the stage of HIV disease and the general health of the mother during pregnancy. The higher rate of transmission is due to the presence of high maternal levels of plasma viremia. Low maternal CD4 + T cell counts have also been associated with higher rates of transmission. However, where combination of antiretroviral drug treatment and Caesarian section are available, this risk can be reduced. Breast feeding is an important modality of transmission of HIV infection in developing countries, particularly where mothers continue to breast feed for prolonged periods. The risk factor HIV infection via breast feeding is highest in the early months of breast feeding.

Symptoms and Signs

The symptoms and signs of HIV infection encompass with level of decrease of CD4+ T cell count and increase in plasma viremia (HIV virus present in blood). Based on the level of CD4+T cell count and viral load (number of virus), the stage of HIV infection can be classify mainly as-
i) Acute infection or Primary infection.

ii) Latency or Asymptomatic stage or chronic infection stage.

iii) AIDS related complex (ARC)

iv) AIDS- This is the final stage of HIV infection and occurs by low CD4+ T cells i.e. fewer to 200 microlitres.

(i) The acute HIV infection

HIV infection occurs when body fluids of HIV infected person inoculate into the body of uninfected person. This leads to rapid viral replication in the recipient body leading to an abundance of virus in the peripheral blood called as viral load. This response is accompanied by a marked drop in the circulating CD4+ T cells – present in lymphocyte (a type of WBC). The acute viremia is associated in all infected person with the activation of CD8+ (Cluster of differentiation8 is a transmembrane glycoprotein and expressed on the surface of cytotoxic T cells and function in killing the antigen) which kills the HIV infected cells and subsequently with antibody production or seroconversion. The CD8+ T cell responses help in controlling the virus levels which increase and decrease as the CD4+ T cell count rebounds.

The symptoms occur usually 2-4 weeks after infection and develop as an influenza, flu like illness, fever, lymphadenopathy (swelling of lymph nodes), pharyngitis, rashes, muscle pain, malaise, mouth and esophageal sores and in lesser symptoms as headache, nausea, and vomiting, enlarged liver and spleen, weight loss, thrush and neurological symptoms. It is seen in 50-70% of all HIV infected person. The disease lasts for about 28 days.

Symptoms usually persist for 1 to several weeks and gradually subside as an immune response to HIV develops and the levels of plasma viremia decreases. 70% of individuals with primary HIV infection having low CD4+ T count cell and high HIV viremia have lymphadenopathy. This symptom recovers spontaneously in most of the infected persons and many are left with only a mildly depressed CD4+ T cell count return to normal range. About 10% of infected persons manifest a fulminant course of immunologic and clinical deterioration after primary infection, even after the disappearance of initial symptoms. In most persons, primary infection with or without the acute syndrome is followed by a prolonged period of clinical latency.
(ii) Asymptomatic Stage or Latency Period or Chronic Stage

The median time for untreated infected person from the initial infection to the development of clinical disease varies around 10 yrs. During the phase of infection HIV is active within lymph nodes causing swollen lymph node that bind and trap in follicular dendritic cell (immune cell). The surrounding tissues that are rich with CD4+ T cell may become infected and viral particles accumulate both in infected cells and free cells. Infected person is still infectious during this stage. During this period if early administration of anti retroviral drugs is done then the longevity of life prolongs compare to deferred therapy. This variation depends on the HIV RNA levels of infected person. Higher the level of HIV RNA in plasma progresses to symptomatic disease faster than do with the lower levels of HIV RNA. Some infected persons generally have level decline in CD4+ T cells and have extreme low level of HIV RNA which referred as long term non progressors group. In some infected person CD4+ T cell count shows a steady progressive decline to extreme low levels that it starts appearing opportunistic disease as first manifestation of HIV infection.

(iii) AIDS related complex (ARC)

This group includes patients with considerable immunodeficiency suffering from various constitutional symptoms or minor opportunistic infections. The typical constitutional symptoms are fatigue, unexplained fever, persistent diarrhea and marked weight loss of more than 10% of body weight. The common opportunistic infections are oral candidiasis, herpes zoster, hairy cell leukoplakia, salmonellosis and tuberculosis. Generalized lymphadenopathy and splenomegaly are usually present. ARC patients are usually severely ill many of them progress to AIDS in a few months.

(iv) AIDS—final stage

This is the end stage disease representing the irreversible breakdown of immune defense mechanisms, leaving the patient prey to progressive opportunistic infections and malignancies. The clinical severity of AIDS varies with the type of infection or malignancy present. In early AIDS many patients are ill only during episodes
of infection which may respond to treatment. Between episodes they may be relatively well and able to resume normal life. Patients with Kaposi’s sarcoma are less ill than those with other malignancies. The illness progress inexorably and death ensues in months or years. Most affected patients present with various complaints like increasing dry cough, dypnea and fever. In USA and other Western countries P. carinii was the characteristic pathogen of AIDS but Mycobacterium tuberculosis are present in most of the cases in developed countries. In developing countries, the most important pathogen is M. tuberculosis with many strains being multidrug resistant. Pneumonia may be viral or fungal. Recurrent pneumonia is considered to be indicative of AIDS.

**Gastrointestinal system**

The mouth is often involved in AIDS with oral thrush, herpetic stomatitis, gingivitis, hairy leukoplakia or Kaposi’s sarcoma. Dysphasia may be due to esophageal candidiasis. A characteristic intestinal pathogen in AIDS is cryptosporidium, salmonella, mycobacteria, isospora, CMV or adenoviruses also frequently cause intestinal infections. Systemic strongyloidosis may occur. Chronic colitis is common in male homosexuals (gay bowel syndrome) from which ameba; giardia and a host of diarrheagenic bacteria have been reported.

**Central nervous system**

The typical CNS opportunistic infections are toxoplasmosis and Cryptococcus. Infections are also seen with CMV, herpes simplex, papova viruses, mycobacteria, aspergillus and Candida. Lymphomas of the central nervous system are common.

Malignancies- Kaposi’s sarcoma is the characteristic lesion seen in male homosexuals. It is an indolent multifocal nonmetastasising mucosal or cutaneous origin. The other tumors commonly seen are lymphomas both the Hodgkin and non Hodgkin type.

**Cutaneous**

Besides Kaposi’s sarcoma, herpes lesions, candidiasis, xeroderma, seborrheic dermatitis, prurigo, folliculitis, impetigo and molluscum contagiosum are the common cutaneous lesion.
Dementia

HIV may cause direct cytopathogenic damage in the central nervous system. It can cross the blood brain barrier and cause encephalopathy leading to loss of higher function progressing to dementia.

Pediatrics AIDS

About a third to half the number of babies born to infected mothers are infected with HIV. Children develop humeral immunodeficiency early leading to recurrent bacterial infections. Failure to thrive, chronic diarrhea, lymphadenopathy, tuberculosis and opportunities bacterial infections are common manifestation in pediatric AIDS. Lymphocytic interstitial pneumonia is seen mostly in children, while Kaposi’s sarcoma, toxoplasmosis and cryptococcosis are less common than in adults.

Diagnosis of HIV

Antigen detection –

P24 Antigen test – This is an antigen detection test. Antigens are the substances i.e. foreign body or germs that lead to production of antibodies in the body. It detects the viral protein P24 in the blood of HIV infected individual where it exist as either free antigen or complexes to anti P24 antibodies. This test has its greatest use in screening test for HIV infection in patient suspected of having the acute HIV syndrome, as high levels of P24 antigen are present prior to the development of antibodies.

Virus isolation

HIV can be detected in whole blood circulation and all body fluids. The virus practically can be isolated from the peripheral lymphocytes (WBC), plasma, body fluids like CSF, cervical lavage.

Polymerase chain reaction (PCR) –

This test detects the genetic material of HIV in blood. This is known as Polymerase chain reaction. The main process is extracting and amplifying the genetic material of HIV and then testing for it with a PCR test called as Nucleic Acid Amplification Test (NAT). They are of two types - DNA PCR and
RNA PCR test. DNA PCR test are used for testing newborn babies born in HIV positive mothers and shows positive results within 3-4 weeks. RNA PCR test are most frequently used for serum of blood donors and organ donors and usually show positive result in 2-3 weeks. Both these tests also can be used to measure the amount of virus that is present within a person’s body usually called as viral load test.

**Antibody test**

Antibodies are the body reaction to HIV. So, full form antibodies are usually formed in 6 weeks-3 months.

**ELISA Test**

Enzyme linked immunosorbant Assay also known as Enzyme assay (EIA) is a biochemical technique used for detection of an antibody against HIV.

**Western Blot Test**

This is confirmatory antibody detection test for positive ELISA Test. Here the viral proteins (antigen) are separated first and immobilized. Subsequently, the binding of serum antibodies (Patient) to specific HIV protein is visualized.

**Treatment**

Treatment of HIV/AIDS includes-

i) **Treatment and prophylaxis of infection and tumors**

Prompt diagnosis and appropriate treatment of opportunistic infections and tumors in the early stage of AIDS can be very useful and the patient may be able to resume normal life in between episodes of illness.

ii) **General management**

General management of the patient requires the understanding and cooperation of the health staff in the hospital and of relatives at home.
Groundless fears about imaginary risks have to be allayed and reassurance must be given that the patient can be kept at home or treated in the hospital without fear of contacts if proper precautions are taken.

iii) Immunorestorative measures

Steps at immunorestorative therapy: by administering anabolic steroid, leucocytes transfusion can be tried though it may not be very helpful.

iv) Specific anti HIV agent

Specific treatment with antiretroviral drugs is the mainstay in the management of HIV infection. There is currently no cure for HIV infection but it is certainly seen that use of antiretroviral treatment decreases the chance of HIV transmission thus reduce the risk of HIV from being passed on to another person. The treatment consists of highly active antiretroviral therapy (HAART). Currently HAART drugs use the combination of 3 drugs of two type of antiretroviral drug. These are two nucleoside analogue reverse transcriptase inhibitor (NARTIs or NRTIs) plus either a protease inhibitor or transcriptase inhibitor (NNRTI). The starting of treatment has no empirical rule but it is recommended to start the therapy to all HIV positive people who have CD4 + T cell count less than 350.

Prevention of HIV / AIDS

As have mentioned in this sections, HIV can be transmitted in three main ways-

i) Sexual transmission
ii) Transmission through blood
iii) Mother to child transmission

Preventing the above mentioned routes will reduce the transmission of HIV to individual or eliminate the risk. These interventions can be made through the community, local and national level. Awareness about HIV prevention must be created among all irrespective of caste, religion, economic status, sexes. Specific programs can be made for targeted group mainly to the affected
epidemic area like children, women, homosexual men, intravenous drug users and sex workers.

Preventive measures must reach both people who are at risk of HIV infection and those who are already infected. People who do not have HIV need intervention that will enable them to protect themselves from becoming infected.

People who are already living with HIV need knowledge and support to ensure that they don't transmit HIV to others.

All positive people must take Universal preventive measure

a) Counseling of HIV and testing of HIV.

b) Positive individuals to adhere to get antiretroviral treatment that enabling infected people to live longer, healthier lives.

(i) Prevention of sexual transmission-

HIV transmission during sex can be eliminated or reduced by adopting the following practice

1) Abstain from sex or delay first sex till marriage.

2) Using condom consistently and correctly.

The effective ways to encourage people to adopt safer sexual behavior include media campaigns, social marketing, peer education and small group counseling.

To provide Sex Education comprehensively to young people is an essential part of HIV prevention. This must cover negotiating in healthy sexual relationship as well as accurate and explicit information about safer sex practice. Proper utilization of condoms consistently and correctly will be highly effective in preventing HIV infection. So condoms should be made readily and consistently available to all those who need them. Evidence of circumcision in male reduces the risk of HIV transmission from women to men by around 50% that will reduce in promotion of HIV prevention in high prevalence areas. Preexisting genital infection leads to easy transmission of HIV during sex. So, treating genital infection may certainly help in HIV prevention.
(ii) Prevention for transmission through blood

Transmission of HIV infection usually occurs by sharing equipment to inject recreational drugs among HIV infected persons and with uninfected persons. People who depend on drugs using injection route must minimize the risk of HIV infection by not sharing the equipment. So, the program like Needle exchange programs will reduce the number of new HIV infection by distributing clean needle and safely dispose of used one and also offers related services such as referral to drug treatment centre and HIV counseling and testing. This program must also involve the community outreach, small group counseling and other activities that encourage safer behavior and access to available prevention options. Infected blood and blood products for transfusion is the most efficient ways to transmit HIV. However the transmission can be reduced by proper screening of all blood supplies for the virus and by heat treating blood products wherever possible. All medical procedure and equipment that involve contact with blood such as circumcision, tattooing, minor and major operations must routinely sterilize the equipments. Healthcare workers must practice universal precaution including hand washing and using protection barrier for direct contact with blood and other body fluids.

(iii) Prevention for mother to child transmission / vertical transmission

Transmission of HIV occurs from mother to her baby during pregnancy, labor and delivery and later through breastfeeding. This is also known as vertical transmission.

The most effective measure to reduce the number of babies from infection is to prevent HIV infection in women and also prevent unwanted pregnancies. Vertical transmission can be prevented by giving a course of antiretroviral drugs during pregnancy and labor as well as to the new born baby. This practice often helps in great reduction of vertical transmission of HIV virus. Although the most effective treatment requires combination of drugs taken over a long period of time, even simple dose of treatment can cut the transmission rate by half.

Opting a caesarian section for delivery of the baby reduce the baby's exposure to the mother's body fluid and lowers the risk of HIV transmissions.
Caesarian section is recommended to those who have high level of HIV in their blood. The benefit to their babies outweighs the risk of the intervention. As per World Health Organization recommendations, mothers with HIV must not breastfeed their babies whenever there is use of replacements is acceptable, feasible, affordable, sustainable and safe. However if safe water is not available the risk of life threatening condition from the replacement feeding may be greater than the risk from breastfeeding. All HIV infected mothers should be counseled on the risks and benefits of different infant feeding options and should be helped to select the most suitable option for their situation.

The ultimate comprehension of HIV preventive programs needs a strong political involvement of the society. All sectoral population must participate including employees, religious groups, non government organizations and HIV positive people in such programme and strategies based on good quality science and surveillance as well as consideration of local society and culture in preventing the HIV transmission to make the world free from HIV.

HIV/AIDS in India
The spread of HIV in India has been diverse and most extreme cases are found in the Southern half of the country and in the far North-East. The highest HIV prevalence rates are found in Maharashtra and Gujarat in the west, Andhra Pradesh, Karnataka and Tamil Nadu in the South and Manipur, Nagaland in the North east and West Bengal in the east. In case of India especially in Southern States, the infections are mostly due to heterosexual contact while injecting the drug causes the people of Manipur and Nagaland to get infected. (NACO April 2006).

The vulnerable group
HIV/ AIDS are largely concentrated in at risk population including commercial sex workers, injecting drug users and truck drivers. The surveillance data suggests that the epidemic is moving towards general population. According to NACO, Annual Report, 2009-2010, 87.10% of HIV infections occur through heterosexual routes of transmission. While parent to child transmission accounts for 5.40% of HIV cases detected, 1.60% are through the injecting
drug users. 1.50% and 1% are due to Men who have sex with man and contaminated drug products.

Table 1.1 Routes of transmission of HIV, INDIA, 2009-2010 (till February, 2010)

<table>
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<tr>
<th>Transmission routes</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Heterosexual</td>
<td>87.10</td>
</tr>
<tr>
<td>Parent to child</td>
<td>5.40</td>
</tr>
<tr>
<td>Injecting drug users</td>
<td>1.60</td>
</tr>
<tr>
<td>Homosexual</td>
<td>1</td>
</tr>
<tr>
<td>Unknown</td>
<td>3.30</td>
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In India about 25% of country's population falls in the age group of 15-29 years. However they account for 31% of total AIDS cases of the country. This shows that young people are more vulnerable to HIV infection.

HIV Prevalence in India

India is one of the most populated countries with a population of about 1.2 billion around half of whom are adults in the sexually active age group. The first AIDS cases in India were detected in 1986 from among a cluster of commercial sex workers in Chennai, Tamil Nadu. The spread of HIV in India has been uneven. HIV epidemic are more severe in the southern half of the country and the far north-east. The highest HIV prevalence rates are found in Andhra Pradesh, Maharashtra, Tamil Nadu and Karnataka in the south and Manipur and Nagaland in the North-East (HIV/AIDS State wise statistics India 2010). In the southern states HIV primarily spread through hetero sexual contact. In case of north-east, main routes of transmission are found among injecting drug users (IDUS) and sex workers. According to HIV sentinel Surveillance report (2007) of the test carried out among the high risk group and among antenatal clinic attendees and released by NACO, across India HIV prevalence appears to be low among the general population, but disproportionately high among high-risk groups, such as IDUs, female sex workers, men having sex with men (MSM) and STD clinic attendees. The average HIV prevalence among women attending antenatal clinics in India is
0.48%. Much higher rates are found among people attending STD clinics (3.60%), female sex workers (5.10%), injecting drug users (7.20%) and men who have sex with men (7.40%).

State wise HIV/AIDS prevalence reports are given below:

Andhra Pradesh

Andhra Pradesh in the southeast of the country has a total population of around 76 million, of whom 6 million live in or around the city of Hyderabad. The HIV prevalence at antenatal clinics was 1% in 2007. HIV prevalence at STD clinics was 17% in 2007. Among high-risk groups, HIV prevalence was highest among men having sex with men (MSM) (17%), followed by female sex workers (9.70%) and IDUs (3.70%).

Goa

Goa, a popular tourist destination, is a very small state in the southwest of India and has a population of around 1.40 million. In 2007 HIV prevalence among antenatal and STD clinic attendees was 0.18% and 5.60% respectively. The Goa State AIDS control Society reported that 26,737 people were tested for HIV and 1018 (3.81%) were found to be positive in 2008.

Karnataka

Karnataka has a population of around 6.11 million. HIV prevalence among antenatal clinic attendees exceeded 1% from 2003 to 2006, and dropped to 0.50% in 2007. The average HIV prevalence among female sex workers in Karnataka was just over 5% in 2007, and 17.60% of men who have sex with men were found to be infected.

Maharashtra

Maharashtra is a very large state of three hundred thousand square kilometers, with a total population of around 97 million. The HIV prevalence at antenatal clinics in Maharashtra was 0.50% in 2007. The state has the highest
reported rates (18%) of HIV prevalence among female sex workers. Similarly high rates were found among injecting drug users (24%) and men who have sex with men (12%).

Tamil Nadu

Tamil Nadu is the seventh most populous state in India with a population of over 66 million. Between 1995 and 1997 HIV prevalence among pregnant women tripled to around 1.25%. The State Government subsequently set up an AIDS society, which aimed to focus on HIV prevention initiatives. In 2007 HIV prevalence among antenatal clinic attendees was 0.25%. HIV prevalence among injecting drug users was 16.80%, third highest out of all reporting states. HIV prevalence among men who have sex with men and female sex workers was 6.60% and 4.68% respectively.

Manipur

Manipur is situated in the North Eastern Part of India with a population of about 2.40 million people. Manipur is very close to Myanmar (Burma), one of the world's largest producers of illicit opium. In the early 1980s drug use became popular in northeast India. NACO reports that state-wise HIV prevalence of about 17.9% among IDUs, but studies from different areas of the state find prevalence to be as high as 32%. HIV is no longer confined to IDUs, but has spread further to the general population. HIV prevalence at antenatal clinics in Manipur exceeded 1% in recent years, but then declined to 0.75% in 2007. In case of adult HIV prevalence is reported to be 1.57%.

Mizoram

Mizoram has fewer than a million inhabitants. In 1998, an HIV epidemic took off quickly among the state's male injecting drug users, with some drug clinics registering HIV rates of more than 70% among their patients. In recent years the average prevalence among this group has been much lower, at around 3-7%. HIV prevalence at antenatal clinics was 0.75% in 2007.
Nagaland

Nagaland is another small northeastern state where injecting drug use has again been the driving force behind the spread of HIV. In 2003 HIV prevalence among IDUs was 8.43%, but has since declined to 1.91% in 2007. HIV prevalence at antenatal clinics and STD clinics was 0.60% and 3.42% respectively in 2007.

Punjab

The Punjab, a state in northern mainland India, has shown an increase in prevalence among injecting drug users (13.8% in 2007) in recent years. Ludhiana has an HIV prevalence of 21% among IDUs.

History of HIV/AIDS in Manipur

Manipur is a small land-locked state in India's North Eastern region. It has Nagaland to the North, Assam to the west, Mizoram to the south and a 358 KM border with Myanmar to the east. Due to its geographical location Manipur becomes an alternative major route for illegal international trafficking for Myanmar heroin. In the late seventies HIV spread due sharing of needle with traders in Mandalay.

AIDS has emerged as a new and serious public health emergency in Manipur. The first HIV positive case in Manipur was reported in February 1990. Earlier the main route of HIV transmission in Manipur was sharing of injecting equipment among the Injecting Drugs Users. The HIV/AIDS epidemic is now no longer confined to the Injecting Drug Users (IDUs). The infection has penetrated into the general population through sexual route of transmission. Hence women and children have been increasingly infected with HIV/AIDS. From the very beginning of the detection of HIV in 1990, the state AIDS Cell in the Health Department has been implementing the AIDS Control Program in Manipur. The State AIDS policy was adopted by the State government on 3rd October 1996. Thus Manipur became the first State in India to have a State AIDS policy.
The Manipur State AIDS Control Society (MACS) was formed and registered in March 1998 and since then the society has been implementing the AIDS Control Program in the State. The apex body of the society is the governing body consisting of not more than 17 persons from various Government organizations with the Chief Minister of Manipur, Minister of Health and Commissioner as its chairman and Member Secretary respectively.

Manipur is one of the six highest prevalence States in India with adult HIV prevalence among men is 1.89% while among women it is 0.90% (HIV/AIDS State wise Statistic, India 2010). HIV positive cases among the general population in the state are estimated to be around 40,000. Though the main route of transmission has been injecting drug users, HIV prevalence rate among IDUs shows a declination from 72.78 in 1990 to 17.90 in 2007 showing the success of intervention programs.

Table 1.2 Sentinel Surveillance reports of MACS

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<td>Injecting drug users</td>
<td>19.80</td>
<td>17.90</td>
<td>28.65</td>
</tr>
<tr>
<td>Commercial Sex workers</td>
<td>11.60</td>
<td>12.90</td>
<td>10.87</td>
</tr>
<tr>
<td>Homosexual men</td>
<td>12.40</td>
<td>16.40</td>
<td>17.21</td>
</tr>
<tr>
<td>STD Patients</td>
<td>4.80</td>
<td>4</td>
<td>2.90</td>
</tr>
<tr>
<td>Pregnant women</td>
<td>1.40</td>
<td>1.30</td>
<td>0.50</td>
</tr>
</tbody>
</table>

Sentinel Surveillance report of Manipur State AIDS control Society (MACS) shows that HIV prevalence rate among female sex workers rose up to 12.90 in 2007 but reduced to 10.87 in 2008. Whereas HIV prevalence rate among homosexual men also rose up to 16.40 in 2007 and is rising as it was 17.21 in 2008. HIV prevalence rate due to injecting drug users turned out to be 28.65 in 2008. Out of 393006 blood samples screened up to January 2011 the cumulative no. of HIV positive cases was 31256. Among them 10109 were women and the no. of AIDS cases was 4724. Number of HIV positive children was 2578. Number of death cases was 658.
Latest Epidemiological Analysis of HIV/AIDS in Manipur up to January 2011 is shown below

Table 1.3  Epidemiological Analysis of HIV/AIDS in Manipur up to January 2011

<table>
<thead>
<tr>
<th>Number of blood samples screened</th>
<th>393006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of HIV positive cases</td>
<td>31256</td>
</tr>
<tr>
<td>Number of females</td>
<td>10109</td>
</tr>
<tr>
<td>Number of HIV positive children</td>
<td>2578 (Male-1378&amp;Female-1200)</td>
</tr>
<tr>
<td>Number of AIDS cases</td>
<td>4724 (Male-3381&amp;Female-1343)</td>
</tr>
<tr>
<td>Number of deaths</td>
<td>658 (Male-528&amp;Female-130)</td>
</tr>
</tbody>
</table>

Transmission route of HIV/AIDS in the state is no longer confined to IDUs but it has penetrated into the general population from IDUs through sexual route thereby spreading the epidemic to females and children. As a result Prevalence rate among pregnant women has increased from 0.80% in 1994 up to 1.30% in 2007. The trend is not yet stabilized.

Table 1.4  Routes of transmission of AIDS cases in Manipur during the year 2007-2008

<table>
<thead>
<tr>
<th>Route</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Through infected syringes and needle(IDU)</td>
<td>49 %</td>
</tr>
<tr>
<td>Sexual route</td>
<td>33 %</td>
</tr>
<tr>
<td>Parental</td>
<td>5 %</td>
</tr>
<tr>
<td>Through blood and blood product</td>
<td>2 %</td>
</tr>
<tr>
<td>Not specified</td>
<td>11 %</td>
</tr>
</tbody>
</table>

In India 2.50 – 3.20 million people are estimated to be living with HIV at present. Manipur is one of the six highest prevalence States in India as identified by NACO, Ministry of Health and Family Welfare, Govt. of India (High Prevalence State means that more than 1% of the pregnant mothers in the state are HIV infected) and the other six States are Maharashtra, Tamil Nadu, Karnataka, Andhra Pradesh, Manipur and Nagaland.
Most of the HIV infections in Manipur are concentrated in the four valley districts namely Imphal East, Imphal West, Bishnupur and Thoubal. The twin district of Imphal East and Imphal West contribute more than half of the HIV/AIDS population in the state. Tuberculosis (TB) is the leading cause of death among people.

**Achievement and Performance**

To control the trend of HIV/AIDS epidemics Manipur State AIDS Control Society launched AIDS Control Society Targeted Intervention Projects. There are 57 targeted interventions (TI) as on 31st March 2008. In the year 1999-2000 a special project “Rapid Intervention and Care (RIAC)” was launched. The aim of RIAC project was to prevent HIV transmission among IDUs by stopping the needle/syringe sharing under NSEP (Needle Syringe Exchange Programme). RIAC project was launched by the Hon’ble Minister (Health), Government of Manipur on 7th November 1998 comprising of education counseling needle syringe exchange programme bleach and teach program, voluntary HIV testing, condom protection, home care programme for reducing the spread of HIV infection among IDUs. Manipur is the first state in India to have adopted the strategy based on “Harm Reduction” or “Harm Minimization”. By this prevalence rate of HIV infection among IDUs showed a decreasing trend from 72% in 1997 to 21% in 2004-2005 and 17.90% in 2007.

**Intervention for commercial sex workers (CSWs):**

The estimated no. of CSWs in the State is 8096. By intervention programmes, no. of CSWs found positive had decreased from 13% in 1999 to 8.60% in 2005-2006. By 2008, there were 5 NGOs providing interventions.

**Intervention for homosexual men:**

Two NGOs are currently taking up the project. The members of homosexual men covered under the two projects have increased from 1002 during 2006-07 to 1120 in 2007-08.
Interventions for Migrant Workers:

Migrant workers generally belong to sexually active age group 15-45 years. They are vulnerable to STDs including HIV/AIDS. Till 31\textsuperscript{st} March 2008, 22625 MWs had been covered through 3 NGOs.

Interventions for Truckers

The State has two national highways and artery States highways connect then to new districts of the State. The Truckers in the national highways are more vulnerable to STDs as compared to short-distance truckers. NGOs are implementing the intervention program and 18,330 trucker have been corrected till 31\textsuperscript{st} March 2008.

Prevention intervention for general community

Information Education and communication (IEC)

IEC is a process that informs, motivates and helps people to adopt and maintain healthy practices and life skills. It aims at empowering individuals and enabling them to make correct decisions about safe sex behavior practices. For effective implementation of IEC different media, newspapers, journals, periodicals leaflets/folders, Shumang Lila (Local drama), street play, puppet show, posters were utilized. Workshops, seminars and awareness training program for various groups of population were also organized. The Manipur Legislators Forum on AIDS was formed on June 30\textsuperscript{th}, 2007 taking the responsibility of spreading messages on HIV/AIDS to their respective constituencies and to the people.

School AIDS Education

In Manipur, the program of AIDS Education in schools is being taken up by District AIDS Communities. Approximately 724 Schools have been covered.
Voluntary Confidential Counseling and Testing Centre (VCCTCS):

In Manipur there are 21 VCCTCS. The total no. of clients attending VCCTCS from January till December 2005 was 7,973.

Prevention of Parent to child Transmission (PPTCT) of HIV/AIDS:

Manipur is one of the 6 high prevalence states of India where HIV prevalence among pregnant woman is above 1% (Sentinel Surveillance in 2004). National AIDS Control Organization (NACO) Ministry of Health and Family Welfare Government of India and UNICEF collaborated and PPTCT feasibility study was initiated in 1999 in the prevalence States including Manipur. There are 41 PPTCT centre already in cooperation in Manipur. There are six ART centers providing free ART Drugs. In addition there is one private ART center at Churachanpur. ART center at RIMS in Imphal west commenced on 5th April 2004 and ART J.N Hospital in Imphal East has commenced on 1st December 2004. Out of 3628 patients registered by 31st March 2008, 1838 patients started on ART in ART Centre at RIMS. Again out of 4351 patients registered in ART Centre at JN Hospital 2274 patients started on ART at the end of 31st Dec 2004.

Care and Support (Community Care Centre CCC):

In Manipur, there are 6 Community Care Centre CCC with strength of 70 beds. Out of which 20 bedded centers are in Imphal East and 10 bedded centers are in Imphal West.

Despite the serious efforts at preventing the spread of HIV/AIDS thousands of people continue to be AIDS victim throughout the world. Thus not only should the local worker, medical and paramedical be involved in this efforts but a programme of education to raise the awareness of people needs to be put in place. Such a programme should essentially be directed at the young adolescents who fall prey to the malaise more easily.

Sex Education

Generally adolescents are curious about some or all the aspects of their sexuality. Traditionally adolescents were not given information on sexual matters. Discussions of such issues were considered as taboo. Sexual related
matters were put off until just before marriage. Adolescents try to acquire knowledge on sexual matters from friends, media and sub-standard books. Such knowledge could not provide necessary information that enable adolescents from increasing incidence of teenage pregnancies and also from being prey to sexually transmitted diseases. In the early periods of twenty century many youths of the United States and European countries suffered from the problems of teenage pregnancies and sexually transmitted diseases.

In the 1890’s various health reformers and ministers in the United States and in England began to publish a flood of pamphlets and books to inform the young man regarding sex related issues. The formal movement of sex education commenced in the early twentieth century.

In 1914 the New York Physician Prince Morrow and the religious crusader Anna Garlin Spencer founded the American Social Hygiene Association (ASHA) which aimed to improve the prevailing sexual immorality in Chicago and New York. Prostitution was a fairly open secret in the most urban areas.

ASHA and related societies proposed a program in sex instruction for high school age youth so that youths could be protected from sexual immorality and subsequent dreadful diseases and unwanted events. Since children are the pillar of future generation once they are given appropriate information about human sexuality and sex related issues and equipped them how to get rid of unwanted pressure that may lead to dreadful diseases, the whole nation could be free from various sex related problems. Chicago became the first major city to implement sex education for high schools in 1913. The concept suffered from immediate opposition. The Catholic Church had a strong opposition towards the program. Supporter of the program felt that scientific knowledge about sexuality would lead young people down the path to moral behavior. Opponents argued that any suggestion of sexuality no matter how well intended would corrupt students mind.

In 1920’s sex education made progress into the curriculum both in the United States and France.
ASHA and its allies expanded the term sex education to family life education. Instead of teaching sexual prohibition this new family life education attempted to instruct students in the positive satisfaction to be gained from a properly ordered family life. Lessons on child rearing, money management, wedding planning, dating, and a wide variety of other daily tasks were the main component of family life education. In the 1960’s and 1970’s the rates of premarital sexual activity, pregnancy, and sexually transmitted diseases climbed steeply, sex educators developed sexuality education which was intended to include information on birth control, teenage pregnancy, masturbation, gender relations, and eventually human sexuality.

In the United States, the pandemic of Human Immunodeficiency Virus / Acquired Immunodeficiency Syndrome began in the 1980’s and hence every European nation realized the necessity of an educational program in safe sex. Even the conservative opponents in the United States came to recognize that some form of sex education was going to be almost inevitable, they launched their own movement to replace sexuality education with abstinence education.

Sex education (from Wikipedia) refers to formal program of instruction on a wide range of issues relating to human sexuality including human sexual anatomy, sexual reproductions, sexual intercourse, reproductive health, emotional relations, reproductive rights and responsibility, abstinence, contraception and other aspects of human sexual behavior.

Common avenues for sex education are parents or caregivers, school programs, and public health campaigns.

**Objective of sex education**

Macuab (2004) outlined some general objectives for family life and sex education in accordance with Illinois sex education act. These include:

i) To make affection, sex and love constructive rather than destructive forces in the society.

ii) To develop feelings of identity, respect, and responsibility as an integral part of one’s own development.

iii) To understand and appreciate the sexual side of human nature so that their socio-sexual development may occur as normally as possible.
iv) To learn that human sexual behavior is not merely a personal and private matter but has important social, moral and religious implications.

v) To learn about the dangers of illicit sexual behavior.

vi) To emphasize the case of pre-marital chastity provides a positive goal for teenage linking sexual human behavior with love, marriage, parenthood and family life.

vii) To open channels of communication between students and their teachers concerning the meaning, significance and potential values of sex in human life so that students will find it easier to seek information from reliable sources rather than relying on hearsay or misconception.

viii) To understand that boy and girl, man and woman relationship of the right kind can lead to enjoyment and give meaning to their lives.

ix) To develop a healthy, wholesome attitude towards sex in human being including respect for their bodies as an integral part of their personality.

x) To appreciate the significance of sexual difference in girls and boys and male and female sexual roles in our society.

xi) To understand how to deal with personal sexual problems such as menstruation, nocturnal emissions, masturbation and personal hygiene.

Adolescence education: ‘Adolescence education’ is a new educational area, emerging in response to the demands for introducing in the school curriculum the elements relating to usual critical problems that confronts during the process of growing up. Realizing the problems faced by adolescence, the National Council of Educational Research and Training (NCERT) organized a National Seminar in April 1993 and recommended the introduction of “suitable components of ‘Adolescence education’ in the curricula at all stages of schooling.” As a follow up of its recommendations, a general framework of adolescence education was finalized through nationwide consultations focused on the following three requirements:

i) Incorporating all the critical concerns of Adolescent Reproductive and Sexual Health (ARSH) in the specific context of Indian socio-cultural ethos
ii) Preparing the scheme of contents suitable to provide adequate coverage to ARSH concerns in consonance with the nature and scope of existing school syllabi of different stages.

iii) Identifying curriculum transaction strategies suited to the specific needs of this new curricular area.

The term 'Adolescence education' was used for the first time by UNESCO, Principal Regional Office for Asia and the Pacific (PROAP), Bangkok as the title of a package on sex education. Different concepts like sex education, sexuality education, and family life education reproductive health education have been used to describe the nature of this educational area.

'Adolescence education' may be defined as an educational endeavour to provide learners with accurate and adequate knowledge about adolescent reproductive health with a focus on the process of growing up during adolescence, in its biological, socio-cultural and moral dimensions. It aims at inculcating in them rational attitude towards sex, phenomena of HIV/AIDS and drug abuse, so that they develop respect for the opposite sex and responsible behavior towards sex drugs.

**General objectives of ‘Adolescence education’**

1) To provide authentic and accurate information about physical, physiological, psychological, socio-cultural and interpersonal issues of reproductive health to students in order to develop in them proper understanding of the process of growing up.

2) To inculcates among students a healthy attitude towards sex and sexual behavior.

3) To help them understand the implications of AIDS and causes and consequences of HIV infection as well as the ways and means to prevent it.

4) To make them aware of the causes and consequences of drug abuse and the ways of preventing it, and to develop in them rational attitude as well as the skills to say ‘no’ to drugs.
**Major Components:** ‘Adolescence education’ has been developed under the three major components.

1) **Process of Growing up:** The component contains critical issues relating to the process of growth and development of the child into adulthood such as physical, psychological, and social aspects of growth including male body clock, female body clock, social and moral issues, self-concept, self-esteem, sex drive and attraction towards opposite sex, socio-cultural development including relationship of adolescents with parents, peer group, and opposite sex and gender roles and myths and misconceptions. Critical issues like adolescent pregnancy, nutritional needs of adolescents in general and adolescent girls in particular, major sexually transmitted infections (STIs), reproductive tract infections (RTIs) and adolescent health services (AHS) are also included in this component.

2) **HIV/AIDS:** The component of HIV/AIDS includes contents relating to causes and consequences of HIV/AIDS, preventive measures, and individual and social responsibilities towards persons having HIV/AIDS.

3) **Drug Abuse:** This component covers situations in which adolescents fall prey to drugs; consequences of drug abuse, preventive measures, treatment, rehabilitation of drug addicts, and individual and social responsibilities.

**Implementing agencies:**
Almost all the institutions engaged in school education, teacher education, adult literacy programme, innovative education schemes at national, states and district levels are involved in the implementation of this program.

**National level:** National core committee under the chairmanship of Education secretary is the highest policy making and monitoring body. COBSE (Council of Boards of School Education) and NIOS (National Institute of Open Schooling) are implementing AEP (Adolescence Education Programme) supported by UNFPA (United Nations Fund for Population Activities) and conducting activities for effective integration of Adolescence education in
sylabls, textbooks curricula study materials and evaluation process. CBSE (Central Board of Secondary Education), KVS (Kendriya Vidyalaya Sangathan), NVS (Navodaya Vidyalaya Samiti) are implementing AEP supported by UNFPA and conducting activities for organizing life skills based co-curricular activities in ‘Adolescence education’ in their respective schools. IGNOU (Indira Gandhi National Open University), NCTE (National Council for Teacher Education), Directorate of Adult Education are involved in the implementation of ‘Adolescence Education Program’ for facilitating integration of ‘Adolescence education’ elements in the content and process of Open University system, pre service teacher education and adult education system.

Adolescence Health Education Program (AHEP) was implemented by the Kerala State. AIDS Control Society through the State Council for Educational Research and Training in four district viz Kozlikode, Wayandi, Ernakulum and Pathanamthitta. The program addressed the students of 9th and 11th students in all the 652 High Schools and 336 higher secondary schools of these districts.

The State AIDS Control Society Chandigarh would implement ‘Adolescence education’ in 9th and 11th standard for a minimum of 16 hours in 2010-2011 academic sessions. The main objective was to equip every adolescent with scientific information and life skills to protect themselves from HIV infections and empower them to manage their concerns pertaining to reproductive and sexual health.

Tamil Nadu and Andhra Pradesh had also AEP program implemented in school curriculum. Tamil Nadu Government aims at covering all schools in Tamil Nadu by the year 2010. The program is implemented through the directorate of Teacher Education Research and Training and Directorate of school education.

Maharashtra has banned the introduction of sex education in schools. Gujarat and Madhya Pradesh announced similar decision.
Status of ‘Adolescence education’ in Manipur

Since Manipur is one of the HIV/AIDS prone areas, Government as well as Non Government Organizations has been trying to reduce the infection from this dreaded disease. Non Governmental Organizations are trying to give awareness regarding HIV/AIDS, its causes, transmission, prevention and rehabilitation through various media like T.V, Radio, posture campaigns, drama, street play etc. They are also organizing workshops, seminars to equip the people about HIV/AIDS and enable them to escape from such deadly disease. From Government side SCERT (State Council Educational Research and Training) is taking main part in giving awareness about HIV/AIDS, substance abuses and process of growing up through various programs. Concepts about HIV/AIDS and Drugs are included in the syllabus of secondary level but still adolescence reproductive health is excluded. Government is attempting to include the entire components of ‘Adolescence education’ in the school curriculum. For this nodal teacher training program has already been started. As a part of the training program the nodal teachers have started giving information related to sex and human sexuality to students in secondary schools. But formally in the curriculum all the components of ‘Adolescence education’ are still yet to be implemented.

Due to the rapid physical and psychological (mental, intellectual and emotional) changes, behaviors of adolescents differ from that of children. With the outset of puberty and accompanying physiological changes adolescents are unable to cope with their increased curiosity and interest in sex related issues. In fact sexuality is a natural and intrinsic part of an individual’s personality and needs to be nurtured, but as these aspects are completely ignored by parents, teachers and guardians, these young persons are driven towards unreliable and misleading sources for information like, friends, movies, cheap and low standard books and novels which leads to irresponsible sexual choices, enjoyment through drugs/alcohol etc. On the other hand because of improvement in nutrition and health care, the age of adolescence is extending. As a consequence, young people have a longer
interval between the onset of sexual maturity and marriage, increasing the possibility of their engaging in pre-marital sexual relations. According to Indian Drug Country Report 1995 most of the Drug abusers belong to the 18-25 years of age group.

From all the above facts, adolescents are considered to be important both as a target group with a high risk of contracting the disease and also a potential source for prevention of HIV/AIDS.

To provide accurate and authentic information about sexuality and adolescents reproductive health needs, attempts were made during 1970's and 1980's. It was during 1990s that concrete efforts were made in this direction (NPEP, NCERT, Sept, 2003). Due to national taboo, a need arises to replace 'sex education' by 'Adolescence Education'. National seminar on 'Adolescence education' held in April, 1993 organized by NCERT, recommended the introduction of 'Adolescence education' in the school curriculum. It has emerged as an educational response to the pressing demands for introducing in the school education, the essential elements relating to the problems that confront the adolescents during the process of growing up. In Orissa, 'Adolescence education' has been introduced and tried out in 80 project schools to introduce elements of 'Adolescence education' to adolescent boys and girls. On the basis of that experiment, it was recommended that 'Adolescence education' may be implemented in schools. Despite these measures HIV/AIDS continues to spread at an alarming rate.

This outspread of HIV/AIDS among the young people calls for the immediate introduction of 'Adolescence education' in schools. Manipur is one of the highest HIV/AIDS prevalence states in India and Imphal district (both Imphal east and Imphal west) being the most affected one. Despite this fact, no serious attempt has been made to study the levels of awareness of HIV/AIDS and attitude of the vulnerable adolescents, their parents and teachers. Since a positive attitude towards 'Adolescence education' and awareness about AIDS is necessary before an education intervention can be made to prevent the spread of HIV/AIDS and its cure. The present study focuses on the awareness level of parents of adolescent students, teachers and adolescent
students. It also examines their attitude towards a program to prevent HIV/AIDS i.e. ‘Adolescence education’.

Statement of the problem
The present study is an attempt to find out the awareness about HIV/AIDS parents, teachers and adolescent students and their attitude towards ‘Adolescence education’ and or titled “AIDS awareness and Attitude towards Adolescence education: A Study of Parents, Teachers and Students of Manipur”.

1.2 Objectives of Study
The objectives of the study are:

1. To find out parents’, teachers’ and student’ awareness about the HIV/AIDS

2. To find out parents’, teachers’ and student’, awareness about the ways of transmission, preventive and rehabilitation measures.

3. To find out parents' teachers' and student', awareness about 'Adolescence education'

4. To find out parents’ teachers’ and student’, attitudes towards ‘Adolescence education’ in relation to their socio-economic and educational background.

1.3 Research Questions
Since the present study is an exploratory survey, no hypotheses are proposed to be tested. Instead the study is intended to answer the following research questions.

1. What is the extent of awareness of parents, teachers and students regarding HIV/AIDS?

2. Does gender affect a person’s awareness of HIV/AIDS?
3. What is the extent of awareness of parents, teachers and students regarding the ways of transmission of HIV/AIDS?

4. Does gender affect a person’s awareness of the ways of transmission of HIV/AIDS?

5. What is the extent of awareness of parents, teachers and students regarding preventive measures of HIV/AIDS?

6. Does gender affect a person’s awareness of preventive measures?

7. What is the extent of awareness of parents, teachers and students regarding rehabilitation measures of HIV/AIDS?

8. Does gender affect a person’s awareness of rehabilitation measures?

9. What is the extent of awareness of parents, teachers and students regarding ‘Adolescence education’?

10. Does gender of a person affect a person’s awareness of ‘Adolescence education’?

11. What is the attitude of the parents, teachers and students towards ‘Adolescence education’?

12. Does the attitude towards ‘Adolescence education’ differ between male and female respondents?

13. Does religion affect the attitude of parents, teachers and students towards ‘Adolescence education’?

14. Does educational qualification affects attitude of parents, teachers and students towards ‘Adolescence education’?

15. Does occupation of parents affect their attitude towards ‘Adolescence education’?
1.4 Operational definition of the terms used

**HIV:** In the present study HIV means Human Immunodeficiency Virus

**AIDS:** In the present study AIDS stands for Acquired Immunodeficiency Syndrome.

**AIDS Awareness:** In the present study AIDS Awareness means the knowledge and information of the respondents regarding the symptoms of disease, its causes, preventive and rehabilitation measures.

**Adolescence:** Adolescence is the period of physical, psychological and social maturity from childhood to adulthood, the period extends from puberty to the attainment of full reproductive maturity (NCERT 1999).

In the present study, the boys and girls (studying in class IX-XII) in the age group from 15-18 years are treated as representing adolescents.

**‘Adolescence education’:** It is an educational intervention, which is entirely different from the general education given to the adolescents that comprises the process of growing up, AIDS awareness and drug abuses.

**Sex education:** Sex education is an educational intervention for the adolescents. There is a provision of sex related knowledge in the realm of education. It provides awareness to the adolescents to understand the sex problems scientifically.

**Attitude towards ‘Adolescence education’:** In general Attitude means the manner of acting, feeling or thinking towards some object or event. In the present study attitude stands for the feeling, thinking and the manner of acting that shows disposition and opinions of parents, teachers and students towards ‘Adolescence education’ and its implementation in school curriculum.

**Occupation of Parents:** Full time employment, the wages for which are the main sources of livelihood of a person is occupation. For this study occupations have been categories into the following five groups.

i) **Business:** It refers to those occupations such as shopkeepers, salesman, vendors, contractors, small producers.
ii) Professionals: This category covers Doctors, Engineers, Lawyers.

iii) Teachers

iv) Government servants: This category covers Policeman, Nurses and those working in the Government offices other than teachers and professionals.

v) Others: It refers to occupations like small peasants and homemakers and artisans like goldsmith, carpenters, tailors etc. These groups have been clubbed together because frequency in each group was very small.

**Religion:** In the present study the majority of the respondents belong to Hinduism followed by Christianity. Other religion refers to Islam, Sanamahi and tribal form of worship.

**Educational qualification:** Only level of formal education have been included and categorized as follows:

i) Illiterate

ii) Upto H.S.L.C. (High School Leaving Certificate)

iii) Upto H.S.S.L.C (Higher Secondary School Leaving Certificate)

iv) Upto Graduate

v) Upto Post graduate

Since very few parents had less education than high school, elementary education and high school (secondary education) have been clubbed together. All graduates have been clubbed together as the number of professional graduates was very small.

**1.5 Delimitation**

Due to paucity of time and resources at the investigators disposal she could not undertake the study at macro level like a country or a state. The study therefore is delimited to examining a sample of students of class IX to XII in the two districts of Imphal East and West of the state of Manipur. Parents and teachers of the students of the sample are also included as per requirements of the study.