CHAPTER ONE

INTRODUCTION

This chapter presents an overview of HIV/AIDS – global and Indian scenario and proceeds to look at the key concepts of the study – mobility and HIV, vulnerability, risk behavior and risk perception. The theoretical framework of the study is also elucidated.

Nearly three decades have passed since the disease AIDS (Aquired Immunodeficiency syndrome) and the virus causing it HIV (Human Immuno deficiency virus) were recognized among the gay community in New York and Los Angeles in 1981. Initial epidemiological data saw a majority of cases being reported from United States of America and Europe. In the 1980s the epidemic created a furore in Sub-Saharan Africa where a high prevalence rate was reported. The South and South East Asian countries were also seen as highly vulnerable to the epidemic as increasing numbers of AIDS cases started emerging from this region. Since then the epidemic has covered vast physical distances and has spread across geographical areas impacting several continents. The epidemic has impacted people across class, gender, social hierarchy and political boundaries. Mann Jonathan et al. (1992) [1] reports that AIDS is seen as a pandemic affecting all inhabited continents with AIDS cases reported officially by 164 countries and HIV infection has been documented in virtually all countries.
HIV/AIDS is a lentivirus and a retrovirus (Kadiyala S & Barnett T, 2004). Those infected are infectious over a long period, are in fairly good health and can inadvertently infect others. The virus has the ability to convert its genetic material and insert itself into the host’s cell which becomes a factory for new viral particles. Thus the epidemic has social and economic effects targeting the most productive section of the society. The pediatric and geriatric populations are also affected as they are forced to join the labor force and contribute to household income in the absence of its productive members. According to the United Nations Development Programme (UNDP) HIV has affected the “single greatest reversal in human development” in modern history (UNDP 2005).

“In the worst affected countries of the world HIV/AIDS has influenced all sectors of the society by making economies stumble and undermining human security”


1.1 HIV/AIDS – the virus and the people

The epidemic comprises two basic elements – HIV virus and the people affected. The former i.e. the virus can be responsive to medical intervention and the latter is largely dependent on societal conditions and structural factors for rehabilitation. As far as the virus HIV is concerned, it is a medical entity and perhaps the most researched. The virus, manifestations of the disease, treatment and prognosis have been the subject of vast research study. Simultaneously, social science researchers are studying the dynamics of social relations, interactions and behavior patterns to understand the risk behaviors that can make certain sections of the population vulnerable to HIV/AIDS and to advocate
behavior change modifications. In this context, human behavior emerges as having the potential to shape the future of the pandemic but remains by and large a very diverse and barely understood concept. Karnik S. N. (2001) [3] states that “unfortunately, as difficult as the disease can be to contend with in the medical clinic, the epidemic of interpretative meaning, or significancation, is equally difficult to track.”

Treichler (1992), Harding (1992), and Waldby (1996) [4] postulate that within a post structural analytic framework, medicine is understood as an institution whose production of knowledge, like that of any other institution, is informed by cultural ideologies concerning gender, sexuality, poverty and social normativity. The point to be stressed is that while the biomedical model looks at the virus, its etiology, symptoms, prophylaxis, it is equally imperative to understand the social determinants of the disease. Placing the disease and human behavior leading to it within the socio-cultural context can help to unravel the dynamics surrounding its transmission and the subsequent behavior change modifications which would be the ultimate goal of the interventions.

Thus it would be very narrow and misleading to view the epidemic as just as medical and health problem. It has to be seen as an encompassment of economic, social and security dimensions. AIDS is not purely a biomedical phenomenon, it has important social dimensions as well. These range from the psychological consequences of being medically diagnosed as either HIV antibody positive or as having AIDS to the complex social processes that organize popular perceptions and social responses to AIDS (Altman, 1986).
Fundamental to the notion that disease is socially constructed is the premise that it is profoundly shaped by both biological and cultural variables ….only if we understand the forces – issues of clan, race, ethnicity, and gender – can we effectively address its biological dimensions. A ‘social construct’ reveals tacit values, it becomes a symbol for ordering and explaining aspects of health experience. In this light, medicine is not just affected by social, economic and political variables – it is embedded in them.

Brandt (1987)

In the early 1990s the HIV/AIDS epidemic was seen as a global phenomenon, highly dynamic and unstable with the major impacts of the infection yet to be seen. The onus of controlling the epidemic was placed on individual and collective behavior. Within the AIDS discourse, the disease was originally seen as largely a gay disease, and then as a disease of prostitutes and, injecting drug users (IDU) etc. Today, three decades later, the HIV/AIDS epidemic continues to expand in all areas and communities. Over the years the epidemic has evolved, changed trends of transmission and has become more complicated.

1.1.1 Global estimates of HIV/AIDS

An overview of the global scenario is essential to understand the geographical spread of the epidemic. There are 33.3 million people globally living with HIV, of whom 22.5 million are living in Sub-Saharan Africa (UNAIDS, 2008). On a global scale, HIV epidemic has stabilized to a great extent though there are still high levels of HIV infection and AIDS deaths reported. The annual number of new HIV infections has declined from 3.0 million in 2001 to 2.7 million in 2007. Overall, 2 million people have
died due to AIDS in 2007, compared to 1.7 million deaths in 2001. Southern Africa continues to have a high share of global burden of HIV – 35 percent of HIV infection and 38 percent of AIDS death in 2007. The Sub-Saharan Africa is home to 67 percent of all people living with HIV. Women account for half of all people living with HIV worldwide. Over the last ten years the proportion of women among people living with HIV has remained stable globally but has increased marginally in regions such as Eastern Europe and Central Asia. Young people aged 15-24 years account for an estimated 45 percent of new HIV infections worldwide. Globally the number of children younger than five years living with HIV has increased from 1.6 million in 2001 to 2.0 million in 2007. Nearly 90 percent live in Sub-Saharan Africa (UNAIDS report, 2008). [5]

**Asia**

Although South East Asia is the last region in which HIV was found, it has the greatest potential for rapid spread due to population density and inherent risk behavior. After Africa, South and South East Asian countries were predicted to become the next epicenter of the HIV/AIDS epidemic. But of late, the world Health Organization (WHO) opines that the threat of global pandemic might have passed by Asia. Dr. Kevin de Cock, WHO expert [6] state that “Unlike Africa, where the virus has been found to be self-sustaining in general population, a similar trend has not emerged in India and China.”

In Asia an estimated 5 million people were living with HIV in 2007 including those who were newly infected that year. South East Asian countries such as Cambodia, Myanmar and Thailand show a decrease in HIV prevalence. Epidemic in Indonesia, Pakistan and
Vietnam are growing. A much slower pace of growth is seen in Bangladesh and China (UNAIDS, 2008).

1.1.2 HIV/AIDS in India

John et al. (1987) postulate that the ‘time of AIDS’ in India has its beginning in 1986, when serological testing found 10 of 102 female sex workers in Chennai HIV positive. Unlike the west where AIDS was first diagnosed among the homosexual males, in India AIDS case was first diagnosed among female sex workers (FSW) in Chennai in 1986. Since then HIV cases have been reported from all the states of India. In the early days it was thought that the epidemic is a problem of the west and India would not be much affected because of the belief that risk behaviors such as homosexuality, multiple partners etc. were not a part of Indian socio-cultural environment. Ramasubban (1998) [7] holds that it was believed that the traditional socio cultural norms of monogamy, universal marriage and, therefore heterosexual relations and virtual non existence of homosexual behavior, mother goddess worship, and societal proscriptions against an explicit focus on sex and sexuality in public social interactions and discourse provided the necessary shelter from a predominantly sexually transmitted disease. The fact that STDs were the third most important group of diseases in the country, next only to Malaria and Tuberculosis was glossed over (Ramasubban, 1990).

Over the decades, there have been changes in traditional family structures in terms of breakdown of joint family system and emerging nuclear family, rapid urbanization and population movement from rural areas to urban areas. The pace of development being unequal across urban/rural areas, classes and gender, has created grounds for
vulnerability to biological hazards such as HIV/AIDS epidemic. Reduced access to health care resources for maintenance of minimum standards of health, nutrition, housing facilities and livelihood resources are some of the major issues faced by the people. Under these conditions, the marginalized section may often engage in various activities commercial or otherwise which may put them in a high risk position in terms of health concerns, one such example being HIV infection. Failure of social and economic development creates lacunas in infrastructural development and services. The culture of silence surrounding the issue of sexuality inhibits people from accessing information and knowledge regarding modes of transmission and prevention of health epidemics and in many cases even accessing treatment for health care. India being patriarchal society women does not have much voice in terms of negotiation within the family and institution of marriage. Over the years, the infection has covered grounds and has spread across population groups and currently the epidemic is reported among the general population.

Today, India, the world’s second most populous country is ranked as the country with second highest number of sero-positive individuals after Sub-Saharan Africa. There are an estimated 2.27 million people living with HIV/AIDS (PLWHA) in 2008. HIV prevalence rate among adult population has declined from 0.34 percent reported in 2007 to 0.29 percent in 2008. Women account for 39 percent of infections while children account for 3.8 percent of the PLWHA burden. 60 percent of PLWHA burden is in the six high prevalence states of Maharashtra, Tamil Nadu, Andhra Pradesh, Karanataka, Nagaland, Manipur. 19.6 percent of adults and 35.1 percent of children with advanced HIV infection have received treatment by 2007 (UNGASS, 2010). [8]
Major routes of transmission are heterosexual transmission (87.1 percent), followed by parent to child transmission (5.4 percent), IDU (1.6 percent), homosexual transmission (1.5 percent), contaminated blood and blood products (1 percent). The primary drivers of the epidemic are unprotected paid sex/commercial female sex work, unprotected sex between men and injecting drug use. Though all three drivers of epidemic are reported in different pockets and geographical area, the sexual route of transmission continues to be the most important source of HIV infection in India due to the large number of clients who get infected from sex workers. Data from National Surveillance Survey 2006 report that clients of sex workers are the single most powerful driving force of the epidemic. The epidemic is concentrated in certain population groups of the society – 9.2 percent among injecting drug users (IDU), 7.3 percent among men who have sex with men (MSM), 4.9 percent among FSW and 2.5 percent among STD clinic attendees and low prevalence of 0.49 percent among ante natal clinic attendees. HIV epidemic in India is heterogeneous in terms of the geographical variance (NACO Annual Report, 2009-10).

[9]

Shaukat, M & Panakadan, S (2004) opine that the epidemic in India is really a collection of a number of small and large localized epidemics with their own dynamics and rates of growth, in different groups and parts of the country. The epidemiological analysis of data indicates two distinct characteristics of the HIV infection – from groups practicing risk behavior to the general population and from urban to rural areas (NACO 2001). This trend is a major concern as it indicates the spread of the infection in terms of geographical areas as well as population groups.
Recent national surveys such as the National Family and Health Survey (NFHS – 3) confirm this revised estimate of HIV prevalence. Though the prevalence rate is low, global agencies such as WHO, UNAIDS caution that the impact of the country’s epidemic is obscured because of the “denominator problem”: India’s huge population. A seemingly low national prevalence can equal a huge number of infected people as India now accounts for at least 10 percent of the world’s HIV infections and is second only to South Africa (Cohen J, 2004). [10]

1.1.3 National response to HIV/AIDS epidemic

A comprehensive five year plan was launched by the government as National AIDS Control Programme (NACP). Its major components are -

i. Strengthening management capacity for HIV control

The National AIDS Control Organisation (NACO) was established in 1987 for strengthening management capacity to deal with issues such as control of STDs, blood safety, surveillance, quality assurance in laboratory, HIV testing, legal and ethical issues associated with HIV/AIDS and operational research. It was envisaged that NACO would spearhead the HIV/AIDS interventions with support from other sectors. NACO sought to enlist and encourage involvement of every possible actor, public or private, large or small in fight against HIV/AIDS and TD in India (National AIDS Control Programme 1995). These programmes were to be implemented through the existing health care infrastructure, private sector, nongovernmental organizations (NGO) and mass media institutions. Since health is a state subject, AIDS cells were established in the directorate of health services in each state and union territory supported financially by the government of India - State AIDS Control Society (SACS).
ii. Promoting public awareness and community support

Information, education, communication (IEC) materials are used to promote public awareness and community support.

iii. Improving blood safety and promoting rational use of blood

The focus being on safe blood and blood products, testing of blood for HIV was made mandatory in case of blood donation at blood banks. Financial assistance was provided to blood banks to upgrade and modernize the facilities in all blood banks in the public sector.

iv. Building surveillance and clinical management capacity

Surveillance units for HIV infection and AIDS cases were set up and the population was screened for HIV prevalence and trends over a period of time.

v. Controlling sexually transmitted diseases

Upgradation of regional STD referral centers, important health services, STD care and counseling facilities through primary health care centers and general practitioners, integration of STD clinical services in Maternal and Child health/Family planning clinics, innovative campaigns to popularize condom use and upgrade quality condoms to conform to international safety norms were promoted.

Currently in the NACP III (2006-2011) the overall goal is to halt and reverse the epidemic in India over the next five years by integrating programmes for prevention, care and support and treatment. One of the strategies is to focus on the clients of FSW.
Truckers and migrants, categorized as bridge population and prioritized after the high risk groups, are the key occupational groups to be addressed.

“Prevention has been and will continue to be the mainstay of the strategic response to HIV/AIDS…. There is increasing evidence to suggest that India’s HIV epidemic is being driven by sex worker – client interactions (except in North East…). MSM activity in India is not well described but the majority of men with MSM behavior are married so the risk of spread to general population women exists.”


1.1.4 Clinical manifestations of HIV/AIDS

Before elucidating on the concepts of the study, it is essential to understand the clinical manifestations of HIV and AIDS and its impact on the body.

Since the first description of Acquired Immune Deficiency Syndrome (AIDS) in 1981, a great deal of advancement has taken place in medical science to understand the pathology and clinical spectrum of the disease resulting from infection with its causative agent – Human Immunodeficiency Virus (HIV). AIDS by itself is not a disease but it is a group of diseases which a sero-positive individual develops.

AIDS is defined as a disease that is at least moderately predictive of a defect in the cell mediated immunity occurring in a person with no known cause for diminished resistance to those diseases such as Kaposi’s Sarcoma, pneumocystis carinii pneumonia and other serious opportunistic infections diagnosed on the basis of histology or culture.

Centers for Disease Control, Atlanta 1985
There is a great deal of controversy surrounding the origin of IDS. According to some, the virus may have originated in Africa from Simian immunodeficiency virus. African green monkeys have a high incidence of the infection with this virus and use of the African monkey blood in certain fertility rites may explain a transfer between the species. Migrant Haitian workers working in Africa may have carried the virus to the United States of America. The infection made its way to Europe and finally came out as an outbreak in 1981. Currently it has become a global health problem.

1.1.5 Stages of AIDS

By itself AIDS does not have any specific clinical features. Symptoms of HIV are very vague and non-specific. It shows up by its clinical markers in the form of opportunistic infections. Infection with HIV weakens the immune system of an individual making it difficult to ward off certain common infections. These infections are known as “opportunistic infections” as they take the opportunity to cause illness. The repeated infections further weaken the body and health deteriorates and this vicious cycle is repeated.

The classification of HIV infection proposed by Center for Disease Control (CDC) Atlanta divides HIV infection into four chronologically exclusive groups based on the chronology of infection and presence or absence of clinical findings.

- Acute infection – within four to eight weeks of the entry of virus into the body, the person may suffer from recurrent fever, minor abdominal pain and loose motions. These symptoms may subside in two to three weeks.
- Asymptomatic infection – This period may persist for many years in the individual who is HIV positive. The individual may maintain good health though they are fully capable of transmitting infection due to the presence of the virus in biological fluids. Some individuals may have enlarged lymph nodes, anemia and decreased CD4 count.

- Persistent Generalized Lymphadenopathy syndrome – this is characterized by presence of symmetrical lymphadenopathy lasting more than three months. Some individuals may show immunological and haematological abnormalities typical of HIV infection. Patients may still be asymptomatic or may develop range of symptoms such as unexplained fatigue, fever, night sweats, weight loss, diarrhea etc. Only 10 percent of patients go on to develop full blown AIDS.

- Other diseases – fever persisting for more than one month, weight loss of more than 10 percent of body weight within three months, diarrhea for more than one month and AIDS related complex (ARC) which is symptomatic infection with HIV in the absence of tumors, neurological diseases, secondary infectious diseases and secondary cancers.

**WHO’s Diagnostic Criteria for Adult AIDS**

World health Organization (WHO) [11] clinical definition of AIDS in an adult goes by the existence of at least two of the major signs associated with at least one minor sign, in
the absence of known causes of immune suppression such as cancer or severe malnutrition or other recognized aetiologies.

Major criteria (at least two major criteria)

1. Weight loss more than 10 percent of body weight
2. Chronic diarrhea for more than one month
3. Prolonged fever, intermittent or constant for more than one month

Minor criteria (at least one minor criterion)

1. Persistent cough for more than one month
2. Generalized pruritic dermatitis
3. Recurrent herpes zoster
4. Oro-pharyngeal candidiasis
5. Chronic progressive herpes simplex
6. Generalized lymphadenopathy

**Diagnosis**

Diagnosis is made through laboratory tests such as Screening tests (ELISA test, latex and partial agglutination), Supplementary tests (western Blot test) and Confirmatory test (PCR test). There are rapid spot tests also available that provide results within a short span of time.

**Prevention**

Prevention is better than cure – this is true in the case of AIDS as there is no effective vaccine or treatment for this epidemic. The common means for prevention of HIV
transmission are abstinence, monogamous relation and being faithful to one partner, and consistent and correct use of condom; provision of safe blood/blood products from blood banks, using sterilized, disposable or new needles/syringes; antenatal check up and test and counseling.

Mann M et al. (1994) propagating prevention efforts state that “education information, health and social services, and a supportive social environment would strengthen the ability of communities and nation to implement effective programs. These components must be considered at local level, adapted to local culture and implemented with available resources.”

**Treatment**

Since AIDS as such is asymptomatic for a large number of years, diet/nutrition, medical monitoring and a positive living is recommended post test counseling. For opportunistic infections such as tuberculosis, meningitis, candidial infections etc. medical treatment is administered. Treatment of AIDS consists of drugs known as anti retrovirals (ARV) which are taken to slow down replica of HIV in body. ARV is a combination of three drugs – Zidovudine, Nevirapine and Lamivudine. ARV therapy stops people from being ill for many years and have to be taken every day for the rest of the person’s life. The aim is to keep the amount of HIV in body at a low level and stop further weakening of the immune system. When the virus becomes resistant to ARVs the treatment regimen is changed to ‘second line’ ARVs. Taking a combination of three or more anti HIV drugs is referred to as Highly Active Antiretroviral Therapy (HAART). Combination drug is taken to avoid drug resistance and make the treatment more effective in the long term.
1.2 Spectrum of the epidemic – High risk groups, general population and bridge population

At one end of the spectrum are the groups called ‘high risk groups’ (HRG) or ‘core group of high frequency transmitters’. These include FSW, IDU, MSM, and attendees of STD clinics (NACO 2009-10). These groups are characterized by behavior associated with increased risk to contracting HIV virus. At the other end of the continuum are the general populations who are believed to be ‘safe’ from the epidemic as they are not engaged in high risk activities. By 1990s the studies and surveillance reports showed an increasing spread of HIV/AIDS among the general population with great speed. These groups did not necessarily display high risk behavior. In at least six states, more than 1 percent of pregnant women in urban areas are infected with HIV (NACO 1999-2000). A survey in Tamil Nadu showed that 2.1 percent of adult population living in the country side had AIDS. The epidemic continued to shift towards women and young people. This brought out a third category of subgroup called the ‘bridge population’. Bridge population comprises people who through their close proximity to high risk groups are at the risk of contracting HIV. Quite often they are clients or partners of male and female sex workers (NACO 2007). Truck drivers, migrant workers, members of armed forces are considered to be the bridge population. The time lag for HIV infection to spread from high risk groups to low risk groups is between three to five years, as the infection will spread from FSW to their clients who act as bridge population and then to wives of these clients (Shaukat M & Panakadam S. 2004). [12] In many cases married men have acted as bridge between the HRGs and general population and women who are in what they believe as monogamous relationship with their husbands are infected because their husbands have multiple partners. Gangakhedkar et al. (1997) states that 21 percent of all
HIV infections are estimated to be among women with the female male ratio of infection sharply increasing.

Reports from national and international agencies lend credibility to the above stated perspective on the spread of HIV/AIDS among the general population. “HIV spreads among the general population in India because the epidemic has followed what is known as the ‘type 4 pattern’. New infections occur first among the most vulnerable population (such as IDU and FSW), then spreads to ‘bridge’ populations (clients of sex workers and sexual partners of IDU) and then finally enter the general population (UNGASS 2008).”

Scholars postulate that in the initial period, the dependence on the United States and Western countries as reference points for the epidemic may have had a role to play in such a categorization being drawn up. Epidemiologically, focus on risk groups sends a message to those outside of the specific categories that they are not at risk of infection, and to the public health workers that they need not investigate the likelihood of other routes of transmission (Craddock S, 2005). Numerous studies by social scientists on the HIV infection and human behavior component brought out the aspect of the risk behavior i.e. behavior intrinsic to human nature that puts him/her at risk of infection. This alternate perspective shifted the focus from certain groups to certain behavior patterns that came to be the foci of intervention initiatives. Barnett T & Kadiyalal S (2004) supporting such an understanding of the epidemic argue that the concept of risk came to be viewed as risk ‘they’ pose to ‘us’ unabashedly ignoring that the riskiness of the behavior is a characteristic of the environment rather than of individuals or particular practices. It has been argued that it is misleading to talk of ‘risk categories’ as it leads to a belief that it is
someone else’s disease. It is not high risk ‘categories’ that spread AIDS, it is high risk activities, those which involve the interchange of bodily fluids.

1.2.1 Bridge population – Truck drivers and Mathadi workers

Not all the bridge population may be at equal risk but men who are part of the sexual network at the place of destination are highly vulnerable to HIV infection. It occurs within those groups who have higher number of sexual partners or other high risk behaviors. The subpopulation of Truck drivers and Mathadi workers are highly vulnerable to HIV/AIDS because of reasons of mobility. These subgroups are also ‘hard to reach’ population. The drivers due to the mobile nature of their jobs are isolated from the mainstream while the mathadi workers having to relocate to a new location are located in pockets of urban areas. People who are not mobile may also be vulnerable to HIV and its impact, for example, those who live in places that mobile people pass through or settle may be at risk of infection through interactions with the mobile people while the mobile people return home with HIV infection. Their source community may experience the impact of the disease (The United Nations Task Force 2002-2004).

These two subgroups are extremely vulnerable to HIV/AIDS epidemic as their ability to exert control over their health or well-being is dependent on various external factors. Their mobility takes them away from their place of origin to another location i.e. place of destination for employment purposes and it may be a repetitive process whereby the individual makes numerous to and fro journeys across the place of origin and the destination during his occupational years. These subgroups may be in a marginalized position during transit and at stay at the destination.
Truck drivers

Truck drivers constitute an economically important segment of the workforce in India. India has one of the largest road networks in the world and an estimated 5 million long distance lorry drivers. A typical truck driver is between 25 and 35 years old, does not own the truck but drives for an owner or company. He is paid by trip, thus it is advantageous to make frequent trips. A driver is also accompanied by one helper who works as an assistant popularly known as ‘cleaner’. Bronfman M et al. (2002) [13] report that the stereotype of an average truck driver is that of an aggressive, womanizing macho man, independent and capable of consuming large quantities of alcohol. Known as ‘masters of the road’ the truck becomes their second home. The vehicle is used for sleeping, eating and resting.

Journeys are often long and have to be completed over a specific period of time. Truck drivers operate under extremely harsh and stressful conditions – stopping at the border and at check posts, and subjected to long delays and stopovers. After they reach their place of destination, the truck drivers and their helpers have to spend a few days at the parking or the terminus, during which time they unload their goods, clear accounts with their transport office, engage in repairing and maintenance of the truck. Watching movies in cinema-halls, listening to the radio, or audio-cassettes, reading newspapers are some of the major leisure time activities.

Truck drivers after a number of initial visits become familiar with the journey routes and create their own meeting spaces along the routes – restaurants, parking places, bars catering to them where they can exchange information, eat, relax, have sexual relationships. These activities strengthen their links and their identity as truck drivers. Given their
highly mobile lifestyle and the conditions inherent in their work, opportunities for multiple sexual contacts while traveling are numerous. During their journey, long distance truck drivers stop at ‘dhabhas’, roadside restaurants that provides food, rest, sexual gratification, alcohol and drugs. Rao et al. (1999) [14] state that the drivers pick up the women, use them and leave them at some other dhabha. In many locations, sexual activities are available at or near the truck stands. There may be several bars and red light districts around the terminus. Free floating male and female sex workers are available on commercial basis. Studies by Population Services International has brought out that there may be sexual relations between drivers and their helpers who are younger and expected to provide sexual services to truck drivers for no charge. Among this group alcohol abuse is widespread. Many truckers feel alcohol consumption followed by sexual relation will relieve tensions and help cope up with the stress of driving.

For epidemiologists truck drivers are seen as a mobile population, as a vector for infectious diseases, where the speed of dissemination of the infections is related to the number of routes and their trajectory and is directly proportional to the frequency and duration of their movements (Bronfman M et al., 2002). Global agencies (UNAIDS/WHO 1998) believe that because of the broad similarities of occupational and cultural circumstances, long haul drivers in other South Asian countries including Pakistan could have an important role in the spread of HIV.

Wilson et al. (1991) in an ethnographic study of truckers in Zimbabwe concluded that HIV risks are deeply rooted in the nature of the work and therefore intensive condom oriented programme needs to be implemented. In Thailand, a study of long distance truck drivers found that despite being knowledgeable about HIV/AIDS and prevention
measures, their self-assessment for HIV showed a negligible sense of personal vulnerability (Podhisita et al., 1996). Madrigal 1998 in his study of truck drivers in Central America opines that this group is vulnerable to HIV/AIDS due to their working conditions. Besides the commercial sex workers, the drivers may have relation with partners – regular partners and this relation is non-commercial and on one of mutual consensus. Thus they are engaged in high risk activities in which they do not use condoms. Passador et al. (1998) in a study of Brazilian truck drivers found that trust in regular partners is the main obstacle to adoption of safer sex practices among the truck drivers. Similar results have been reported in studies in Central America (Madrigal, 1998).

Long distance truck drivers become important agents in the spread of sexually transmitted infections including HIV infection within a short span of time. They have an HIV infection range of 10/1000, far higher than the national average of about .5/1000 (UNDP Regional project on HIV/AIDS 1992).

**Mathadi workers**

Mathadi is derived from the Sanskrit word ‘matha’ (Head) and denotes those who carry the load on their head. These workers known as head porters, bearers and stackers on shipping docks and in trucks all over the country. They work in groups (tolis) under the guidance of a leader called ‘mukadam’ and the strength of the group may range from 5 to 50 workers. A mathadi worker has two tools of trade – a grappling hook that helps them to tote and balance the sacks on their heads and to arrange in piles in the godown and the second tool is the cloth/scarf usually saffron in color called ‘gamja’ to protect the head and provide support while carrying goods on head. There are around 85000 mathadi
workers affiliated to the mathadi union covering areas of Thane, Mumbai, Raigardh, Nashik, Pune, Pimpri, Chinchwad, Satara, Kolhapur district. Payment is made on piece rate which is fixed with between the mathadi board and the owner of the godown. A particular amount is fixed which is then divided among the members of the group working at the godown on that particular day. The mathadi workers are protected under the Maharashtra Mathadi, Hama and other manual workers (Regulation of Employment and Welfare) Act 1969 which extends to the whole of the state of Maharashtra.

The mathadi workers are from different districts of Maharashtra and a few from other states of India. Most of them are well educated but inability to get gainful employment has led them to register as mathadi workers. They leave their place of origin, stay at the place of destination i.e. APMC market Vashi. Majority of them visit their native places during weekends and days of leave and join back after spending some time with their family. A majority of them have land at their native place which is managed by their family in their absence. During times of harvest, they go back to native place lend a helping hand to complete the harvesting. Many also employ daily wage earners to help them out during that time. After the harvest season they come back to the place of destination and resume their duty.

Earlier a majority of them stayed in the godown and hostels provided within the market. Recently, the Mathadi Board has made provisions for low cost homes to the workers. A few of the workers have shifted their families while a majority prefers to leave their families at the place of origin as they are settled there and do not wish to uproot them. The mathadi workers come from a strong traditional conservative patriarchal society with
strong notions of men as ‘bread winners’ of the family and women as caregivers and caretakers of the house and family.

While the review of literature does not throw light on any study conducted on mathadi workers, for the purpose of the study, these subgroups are located within the category of ‘migrant workers’. Studies of migrants in India, though sparse, indicate that migrants are vulnerable to HIV and migration is a major risk factor underlying the growing prevalence of HIV in the country (Dhapola M et al., 2007). [15] The workers when they come to the place of destination, generally an urban area, from their place of origin, generally a rural area, may be poorly informed about the reproductive and sexual health including HIV and many practice risky behavior both at their place of destination and origin. This places them as well as their families in a vulnerable position.

1.3 Concepts of the study

This section attempts to provide a theoretical understanding of the major concepts used in the study – mobility and HIV, vulnerability, risk behavior and risk perception.

1.3.1 Mobility and HIV/AIDS

The concept of ‘high risk groups’ has been insufficient to explain the vast extent of geographic areas that HIV has pervaded. The vast geographical inroads of the epidemic brought the concept of migration and mobility and its impact on the HIV/AIDS epidemic into focus. Numerous studies have shown the existence of an association between geographic mobility and AIDS (Lalou and Piche 1994; Decosas and Adrien 1997; Kane et al. 1993). [16] Studies by Appleyard and Wilson (1998), Hanour-Knipe and Rector
(1996) provide perspectives on migration and HIV/AIDS in Europe, while essays by Guest (1999), Herdt (1997) and Linge and Porter (1997) give an overview of the implications of population mobility in Asia. The relationship between the two is a complex one and is still poorly understood. Studies by global agencies such as UNDP/UNAIDS on population movement and HIV/AIDS highlights the vast short term movements between rural areas and the cities that so characterizes South East Asia. The circulation of people forms a complex network of continuous contact between origins and destinations that can serve as conduits for the passage of money in the form of remittances, of goods and ideas, and of disease (UNDP, 2000).

The recent literature on migration by geographers and anthropologists differs from the traditional feminist, postcolonial and post development perspectives. These new approaches to migration stress the need to reassess migration as a “cultural event” (McHugh, 2000), organized by practical consciousness, that transforms migrant subjectivities and notions of “place” in gendered, raced, and classed ways (Halfacree and Boyle 1999). In other words they seek to incorporate population geography with social theory. These studies bring out links of population movement to modernization and development concepts of the society and posit that that the impact of movement of people on the spread of HIV/AIDS is very much obvious and complex. It is not a linear relationship and needs to be studied to curb the epidemic among vulnerable sections of population.

**Theories of migration studies**

Broadly there are two major perspectives predominant in migration studies (Standing 1985; Shreshta 1988; Brown 1991) – the Marginalist and Marxist perspective. The
Marginalist perspective postulates that individuals migrate from one sector to another if they expect better wages or marginal returns to their labor in the other sector. The normal assumption is that marginal value product of labor is lower in the agricultural sector as compared to the industrial sector. As a result, agricultural sector expels labor and industrial sector receives them. In this gravity flow model, migration ceases and the system achieves equilibrium when marginal returns to the labor are equalized in both the agricultural and the industrial sectors. The Marxist perspective on the other hand proposes the “divide and rule” thesis (Hart 1986; Pincus 1996) that argues that locally dominant classes in “core” areas recruit seasonal migrants from “peripheral” economically underdeveloped sites and creates a surplus labor pool, thereby exerting pressure on local wages. This makes the local demand for labor more elastic and weakens the bargaining power of resident workers.

The Marginalist approach views migration as a voluntary choice by rational agents seeking better economic prospects while the Marxist approach does not focus much on the voluntarism but views migration as outcome of variables in class interaction and capitalist penetration of agriculture. A critique of both the above mentioned approaches is that in both the approaches there is a strong economic bias that underplays and ignores the cultural universe of the labor migration. New migration scholars through biographical and ethnographic research, seek to highlight how migrants apprehend, negotiate, and transform the social structures impinging on their lives (Halfacree and Boyle 1993; Lorve 1996; Stack 1996; Mills 1999; Lauson 2000; McHugh 2000).

Ethnographic studies bring out the dual nature of migration – as an economic event and simultaneously as a ‘cultural event’. As more people move from rural to urban areas or
travel seasonally to work in formal sectors of the urban economy, their social relations, sense of self, their relation to place and work undergo changes that are manifest in identity formation (Gidwani & Sivaramakrishnan, 2003). Rao A.S.M (1981) [18] has an interesting insight regarding the cultural interpretation of the process of migration. He says “people invest meanings to a place or territory in which they live and they also attach meaning to their movements. In this process they develop a set of symbols of both rootedness and mobility”. He opines that while people are attached to their place of origin and attaches meaning to their ancestral home and land, simultaneously symbols associated with mobility are also valued. A future which is symbolized by mobility is more attractive than the past which is symbolized by the place of origin. The spirit of adventure and risk are more desirable than conservatism. Migrants belonging to a particular region, language, religion, caste, and tribe tend to live together in separate neighborhoods in the cities, and they form ethnic groups on the basis of the shared elements of culture and ideology, merging differences based on sub-caste or sub-region. The migrants try to recreate their culture at the of the place origin at the place of destination which results in cultural pluralism (Bose N. K., 1968).

The distinction between migration and mobility is a little more than a semantic distinction and needs to be clarified for the purpose of understanding of the research. Migration is generally taken to involve the permanent or quasi-permanent relocation of an individual or group of individuals from a place of origin to a place of destination. It implies a more permanent type of relocation and the mover has no intentions of returning to the place of origin and a lot of migrant’s energy is put into becoming established in the new location, though he/she does maintain ties of relationship at place of origin. In a majority of the cases, it is a single unidirectional move to a chosen destination. In the
case of mobility, the migrant will either temporarily or permanently return to the place of origin. They retain property or land in the home community, remit money to family members, return periodically to visit family, maintains an interest and involvement in the political, social or cultural development of the home area. Such mobile people/ migrants invest much less of their time and money in setting down deep roots in the host community. It is only in the last two decades that migration studies have focused on the importance of non-permanent forms of movement in the Third World.

Mobility refers to the movement of an individual by choice or by force to another location from their home either permanently or temporarily either internally or internationally for a host of reasons voluntary or involuntary (UNAIDS technical Update 1997). Mobility may be constrained by physical disability, but more typically it may be influenced by an individual’s ability to afford the psychological and financial cost of the movement or make necessary arrangements to facilitate the move. Mobility unlike other demographic indicators like mortality and fertility, is an element of change which cannot be classified as a unique onetime event but has to viewed as a continuous repetitive process in time and space. It may be repetitive, non-permanent moves such as daily commuting or short term mobility or periodic movement such as seasonal movement with regular annual rhythm.

Mobility may be horizontal or vertical. The former refers to change in occupational position or role or group without involving much change in the position within the social hierarchy. In vertical mobility there is a change in the in the position of an individual or a group within the social hierarchy. The mobility will take the individuals in an upward direction or their position might be worsened and they may move downward the social
hierarchy. Mobility can also be structural in nature where mobility is brought about by the changes in stratification hierarchy itself. It may be a vertical movement of group, class or occupation relative to others in the system.

The movement of the population between rural and urban areas is both a major consequence and a major determinant of social change. From a sociological vantage point, this movement offers potential for significant transformation in sending and receiving communities alike, as various types of individuals (differentiated by age, sex, education, ethnicity, etc.) are added and subtracted from the community. For the individual, the relocation may bring attendant challenges, even as it brings new opportunities. Within the research community, the study of urban–rural population movement would be seen as a subdivision within the broader study of internal migration, urbanization, population redistribution, or migrant adjustment. Historically, the redistribution of persons between urban and rural regions has been driven mostly by changes in economic opportunity, although policy interventions, shifts in region political fortunes, ethnic relations, environmental stress, and other sweeping societal changes also provoke movement. Sociological studies on population movement show that the amount of time spent away from the mover’s place of origin is an important variable in understanding movement and its implications. There may also be correlation between the duration of the movement and the distance the mover has travelled from the home area (Parnwell M, 1993). [19] Parnwell further points out that besides the element of time and space, in order to seek some sense of order amidst the movement types characterized in the Third World, it is important to study the factors that motivate people to leave their home areas.
**Mobility as a process**

There are four stages of mobility. They are –

Source – where people come from, why they leave, what relationships they maintain at home while they are away.

Transit – the places people pass through, how they travel and how they maintain themselves while they travel.

Destination – where people go, the attitudes they meet when they get there, and their living and working conditions in the new place.

Return – the communities to which people return, their families, their resources or lack thereof.

**FIGURE 1.1 The mobility system**

Source: UNDP South East Asia HIV and Development Project (2002)
The arrows represent population movement across the system. The source is the community from which a mobile person originates, the transit is the community through which a mobile person may move before reaching a final destination where the individual is moving to or before returning back to source. This clearly brings out two important points in the continuum of population mobility i.e. place of origin and place of destination.

Population changes are a key factor in the spread of HIV in India. Employment opportunities motivate people to move from rural to urban areas, from one state to another and from one country to another. There are over 180 million migrant workers in India (Hira et al. 1998). Studies on certain highly mobile populations such as truck drivers, traders, military personnel, workers have identified travel or migration as important factor related to the spread of HIV infection. Migration and mobility have increased over the past several years and are expected to continue to because of various reasons. Land and air transport being easily available, economic imbalances between communities push people to move in search of better lives or in order to survive, wars and ethnic tensions displace people and lastly organized migration and trafficking, increasingly move people between countries (UNAIDS 2001). [20]

In the study, the two subgroups, truck drivers and mathadi workers are viewed as mobile population and mobility provides a contextual understanding of the vulnerability factors of these two sub groups. The subgroup of truck drivers is a highly mobile group, spending much of their occupational time on the road while the second subgroup of mathadi workers are characterized by short term repetitive mobility elucidated above. In South East Asian countries short term movement between rural and urban areas is a
common occurrence and this circulation of people across the point of origin and destination creates a complex network of continuous contact and relationship between the two points.

**Understanding Mobility and HIV**

It is a truism that population mobility facilitates the spread of infectious diseases (Prothero R, 1997). Infected persons will carry the infection during mobility process and they may infect others, thus resulting in the spread of the infection from one geographical area to another. Studies on mobility and infectious diseases show that on an average, individuals who move from higher HIV prevalence areas to lower prevalence areas will be more likely to be infected with HIV than those in the lower prevalence areas. This risk will reduce as the epidemic matures and the prevalence level equalizes in the two areas. White (2003) opines that infected individuals will carry the infection with them and, if infectious may infect others, spreading the infection from one area to another. Migration is a crucial factor in high risk sexual behavior and its importance varies by gender and by the direction of movement (Bronckerhoff M and Biddlecom A., 1999). Studies have brought out that high levels of population mobility, coupled with high infectivity levels among the migrants hasten the spread of AIDS. Riskier behavior can be attributed to three factors – predisposing individual characteristics; changes in individual attributes due to migration such as separation from spouse or partner and; exposure to a new social environment with different sexual norms, opportunities and constraints that result in behavior modifications.

Being mobile in and of itself is not a risk factor for HIV/AIDS; it is the situations encountered and the behaviors possibly engaged in during mobility or migration that
increase vulnerability and risk regarding HIV/AIDS (UNAIDS, 2001). It is not the mobility factor in itself that creates increased vulnerability but the very act of mobility places mobile people in situations in which they are more likely to engage in high risk behavior. Right from the source (place of origin) to the transit to destination and the return to place of origin is a complex interplay of movement and this physical movement has to be understood within the socio cultural meaning people attach to this physical movement. For instance, it is important to understand where people come from and the reasons for mobility, how they maintain relationships at home while they are away, the places people pass through, how they travel and maintain themselves during the journey, where people go, the living and working condition at the place of destination, the social world created at the destination point and the meaning they attach to their return to the place of origin and how they adapt once again to their native origin place.

Increased susceptibility to the infection is created due to this dislocation of individuals from their families. The mobile population may encounter various circumstances that may increase their susceptibility to the infection. These may be limited health services, cultural and linguistic barriers, purchase of drugs/sexual service as result of cash income, discrimination associated with migrant status or real or perceived HIV status. Being away from traditional norms and constraints binding social behavior HIV and migration do not have a linear relation but are rather laterally linked. Hostile and lonely environment, separation from families, lack of access to information and services and support systems can lead to social and sexual practices that increase susceptibility to HIV/AIDS.
Regions reporting higher seasonal and long term mobility also have higher rates of HIV infection and higher rates of infection can also be found along transport routes and in border regions (International Migration 1998). Thus the link between migration, mobility and HIV/AIDS is an important aspect necessary to understand the spread of the infection. The shift in the paradigm of looking at the mobile population not as carriers of infection but as a group very vulnerable to the infection is a more compassionate one and may provide deeper insight into this nexus and practical implementation efforts.

**Paradigm shift in understanding AIDS and population mobility – from epidemiological approach to psycho social approach**

Preoccupation with the mobile population as the key factor in the spread of virus is a very narrow viewpoint. It puts blinkers on the researchers and development thinkers and prevents them from gaining a deeper understanding of the complex network of relationships between different groups of people, a factor that has propelled this epidemic into a major health concern. There are two approaches to explaining AIDS and migrants. The first approach is an epidemiological - one that implies migrants as just carriers of disease controlled by the epidemic and helpless against it. The focus is on the epidemiological aspect of the disease. The relationship between the epidemic spatial dynamics and labour migration has been confirmed by many epidemiologists (Prothero 1997; Lydie et al. 1998). Such a perspective appears very mechanical and does not take into account the social and cultural reality of the epidemic. The migrant is seen simply as a vehicle for the virus to reach out to other territory. The sexual behavior which is the pivotal point in the spread of the infection involving human relationship between two or more people is not given importance in an understanding of the epidemic. The force of the argument is on a biological plane rather than a social plane. The second approach is a
psychosocial and sociological one that focuses on the social and behavioral mechanisms which are culture-, region- and gender-specific. Such a contextual outlook brings out the vulnerabilities of the migrants as the core for explaining the prevalence of HIV among certain population groups. The migrant’s legal and social status, socio demographic characteristics among others create a change in the sexual behavior resulting in multiple partners and other risk behaviors that make this group very vulnerable to the infection. The socio cultural matrix within which the risk behaviors and management are constructed gives meaning to these practices. Lalou R et al. (2004) opines that the operating rationality is no longer only that of the structure nor totally that of individuals, but that of the situation within which the behavior takes place. Gentilini & Duflo (1986); Gentilini et al. (1986) state that AIDS is seen as a “pathology of importation” and the migrants are seen as its carriers or as a “pathology of adaptation” and the migrants accumulate vulnerabilities favorable to the infection when subjected to a stressful environment – that of their host area.

The social reality of the migrants is acknowledged and their vulnerabilities to the infection are seen from a humanistic view point. This approach clearly posits that labor migration is not a risk factor in itself, it generates a set of alienating restrictions over which the migrants have no influence such as poverty, difficult living conditions, social and emotional isolation, hard working conditions and also xenophobia. Risk is deemed inherent to the migrant’s condition (Delaunay 1999; Delor and Hubert 2000).

Such an approach also looks at the socio-cultural context of the return migrant’s behavior and also captures the individual and collective risk perception. It advocates that the migrant will face constraints on personal development at the place of origin and...
destination. Thus there is a shift in paradigm from looking at mobility and HIV as mode of stigmatization to one of compassion.

1.3.2 Vulnerability to HIV/AIDS

In an attempt to look beyond the ‘risk category’ and ‘behaviors’, a pertinent question arises in the context of HIV/AIDS—what makes certain groups vulnerable to HIV infection? Why do conditions pertaining to a broad area become a causal factor of disease for some individuals and groups and not for others?

Literature review shows that classical theories of vulnerability have been proposed by scholars studying natural disasters such as famine, flood, and earthquakes. Disasters are often referred to as unplanned socially disruptive events with extreme effects. Scholars advocate that disasters are not natural events but product of social, political and economic environment. They can cause havoc on economic and human development at the level of household, community, state, and nation. The characteristics common to the environment and natural disaster mirrors the way HIV / AIDS epidemic impact the society – spanning over vast geographical areas, large scale damaged human life. Just as disasters are not triggered by a single event but through interaction of multiple factors and even be a built up of unnoticed events, similarly epidemics are also rooted in the social structures of the society. The vulnerability of a population to HIV / AIDS is rooted in the social process and the underlying causes that may actually be quite unrelated to the end result itself, namely the contraction of HIV/AIDS (Wisner B.et al., 2004).
Various models to understand disaster and vulnerability such as Pressure and Release Model (PAR) have been developed. These models are used to outline how disasters are shaped by external conditions that apply pressure until a release is forced resulting in disaster. Tsasis, P and Nirupama, N (2008) [21] elaborates that vulnerability to risk is shaped three factors – resilience of a population to resist and recover from outcome of a disaster; health of a population which is influenced by ‘livelihood’ and availability of social opportunities such as health care services; and degree of preparedness of a population which is shaped by societal values and beliefs.

Anthropological studies addressing risk and its social context have made attempts to understand what makes some individual at higher risk to HIV infection or in other words more vulnerable to the infection. At the biological level, all people are vulnerable to HIV infection if exposed to the virus through its route of infection. Having said that, it becomes important to realize that the transmission requires a certain specific identifiable behavior. It becomes important to understand the social, economic, political and cultural coordinates under which the behavior occurs and certain groups are liable to engage in such behavior.

**Theories of Vulnerability**

The commonsense meaning of the word ‘vulnerability’ is ‘able to be attacked or harmed’ (Little Oxford English Dictionary, 2006 Indian edition Oxford University Press). In the study of disaster this concept is used to mean the characteristics of a person or group in terms of their capacity to anticipate, cope with, resist, and recover from the impact of a natural hazard. It involves a combination of factors that determine the degree to which someone’s life and livelihood is put at risk by a discrete and identifiable event in nature
or in society (Blaikie P et al., 1994). [22] Variables such as age, gender, caste, ethnicity etc. play an important role in determining vulnerability of some groups in comparison to others. Some scholars contrast vulnerability with ‘capability’ – the ability to protect one’s community, home and family, and to reestablish one’s livelihood (Anderson and Woodrow, 1989).

The concept of vulnerability has been used by scholars to understand biological hazards such as the Black death in Europe, small pox and measles in Caribbean and Latin America, to name a few. MacMahon and Pugh (1970) postulate that epidemiologists use the concept of ‘risk’ to explain causation involving the interaction of disease agent, environment and the host. The host is potentially ‘at risk’ because of genetic makeup, age, gender, social class etc. In the context of HIV/AIDS, the political-economic approach looks at structural components to explain the HIV / AIDS epidemic, such as, poverty, unequal access to health care, housing, employment opportunities, government subsidies, nature of production, etc. Vulnerability is determined by the social systems and power relations and needs to be understood in the context of political and economic system that operates in the national and even international scales. It is these factors that determine the health status of groups of people across other variables such as class, caste, occupation, ethnicity and gender. Vulnerable groups are those groups that find it difficult to reconstruct their lives following disasters thus making them more vulnerable to the impact of the epidemic.

Jones and Moon (1993) critiquing such an approach point out that ‘research needs to be comprehensive enough to understand a complex interplay of forces, yet sufficiently focused to get valid and meaningful results’. The feminist theories argue that women
have greater risk to HIV infection than do men. The popular focus on epidemic as one affecting groups with high risk behavior such as commercial sex workers has brought these groups into the spotlight in a negative, stigmatizing manner. Waldby (1996) opines that sexually transmitted diseases such as HIV AIDS have been widely interpreted; tend to be framed through the trope of sexual deviance, bringing purported ‘risk groups’ such as prostitutes into the punitive spotlight with the pathologisation of their sexual practices and the metonymy of their social identity with infectious status.

A post structural approach advocates that the political economic approach needs to be located in the interaction of institutional, cultural, social, economic and historic contingencies of the place. Working on famine and vulnerability, Watts and Bohle add on to Amritya Sen’s work on ‘space and causes structure’ of vulnerability to propose a generic theory of vulnerability i.e. entitlement theory that can be applied to explain disease risk and vulnerability. This framework locates vulnerability in the interrelationship of institutions, historical contingencies and power relations. Elements of this combined theory, particularly empowerment has become relatively common catchwords in more recent literature on disease risk especially in the discussion of women risk to HIV (Schoepf, 1993; Miles, 1993). Sen (1983) talks of entitlement in terms of the importance of access to resources in averting vulnerability and the complexities of acquiring and maintaining that access. This entitlement depends on the political and social forces, in addition to the economic forces. Negotiations take place depending on the political and social status of a person vis-à-vis the household, village or state. He also talks about ‘operations of rights and availability of opportunities’ both of which are determined by position within a kinship or social network, or category within a government system of welfare.
Thus entitlement combined with empowerment and political economic factors constitutes the realist theory of vulnerability. The space of vulnerability is seen as being mapped through the intersection of the tripartite causal powers of entitlement, empowerment and the structural historical forms of class relations within a specific political economy (Watts and Bohle, 1993). Empowerment talks of power relations at the level of household, village, community, state. It focuses on those institutions that regulate access to or control over resources and examines the rules and rights by which individuals claim political and social power. It points towards the rules by which individuals claim resources. Using the same logic, it is possible to look at groups ‘collectively denied” critical rights within and between political domains. Entitlement and empowerment operate within a broader framework of political economy – a structural component. Class is the central analytic core of the political economic focus and vulnerability is seen in terms of the way market forces operate, modes of production and distribution of property rights are used to explain the material deprivation of certain classes to the benefit of others. In other words – why some groups are entitled and empowered while others are not?

The realist approach seeks to explain at what point do people become vulnerable and why? At what point, why, and for whom do the factors become causes of vulnerability? Similar conditions of underemployment and poverty place some individuals at risk of HIV infection or other diseases more so than other groups. A study of HIV in Malawi in Sub-Saharan Africa brought out poverty and disempowerment as centrals in the transmission of HIV. An interesting and thought-provoking finding was that not all women turn to commercial sex work when faced with acute poverty. Some turn to other income generation activities such as selling clothes, household items etc. Similarly in the
face of mobility and its social cultural dimensions not all men engage in high risk activities, only some do. It is thus important a deeper understanding of this group of ‘few men’ in order to bring out the vulnerability of this group.

A critique of the realist model is that it does not focus on the meaning and identity that is important for calculating vulnerability i.e. it ignores the cultural framework of the epidemic which results in increased production of diseased bodies (people living with HIV/AIDS) and identity formation. The medical discourse highlights the location of disease and diseased bodies vis-a-vis dominant norms of conduct, morality and social order. The sexually transmitted diseases are seen as diseases of deviant men and promiscuous women. But there is a need to look beyond this narrow funnel view. The postmodern approach recognizes that the structural components of vulnerability such as allocation of resources, policies have their antecedents in cultural interpretations of the disease.

Is there a simple solution to the problem of infection – is it possible to just say ‘no’? The social, cultural, political dynamics of the epidemic does not permit such as simplistic viewpoint. Craddock S. (2000) opines that power relations produced by the interrelationship of identity, empowerment, entitlement and political economy are consistent or immutable. They are negotiable to a certain extent at the individual if not the collective level. But it would be misleading to conclude that a similar combination of social identification and entitlement or more appropriately disentitlement will result in identical spaces of vulnerability. It is important to understand that relations of power characterizing interrelationships are not monolithic or predictable. For instance – not all men feel the same way about safer behavior practices. Some may be willing for condom
use while others may not. Similarly, individuals occupying similar spaces of vulnerability also display different capacities for resistance to power relations. For instance, in the face of unequal power relations, some commercial sex workers may be able to negotiate safer behavior practices while some may not be able to do so.

A holistic view of disease and vulnerability entails an understanding of both macro and micro level factors that create and perpetuate vulnerability. At a macro level AIDS festers on the faulty lines of the society i.e. the inequalities existing in society. Bernett and Whilteside (2002) opine that poverty, inequality, urbanization, gender discrimination and social cohesion have been shown to increase the susceptibility of individuals to the virus. At the micro level, individuals’ susceptibility varies over a person’s lifetime, changes in response to personal history and is strongly influenced by key institutions such as family, peer groups, country policies, larger cultural entities such as religion and nation state.

Migrants and mobile people are exposed to unique pressures, constraints and living environment. Many of them are separated from their families and spouses. They may feel anonymous, free from social norms that guide their behavior in their family, community and culture. Lonely people away from home are also susceptible to peer pressure. These factors may provoke them to take risks and engage in behaviors that would not have engaged in at home.

UNAIDS Technical Update (2001)

Mann J et al. (1994) points to certain factors that throws light on individual vulnerability to HIV/AIDS. Studies on individual vulnerability have highlighted certain assumptions underlying individual vulnerability. Firstly, every person who is not infected with HIV
has a potential degree of vulnerability and its consequences. This vulnerability may increase as environment changes personal values. Secondly, individuals who will become infected with HIV are vulnerable to unwarranted morbidity, disability or mortality if optimal health services and social support are denied to them. Thirdly, the preconditions of a cognitive, behavioral and social nature will affect the degree to which each person is vulnerable to being infected with HIV, to infecting others or suffering from inadequate health care or social support.

**Vulnerability and HIV/AIDS**

The concept of HIV vulnerability is important because it is important to look beyond responding to high risk behaviors and address broader important issues of mobility, development, access to resources etc. It enables agencies to design intervention programmes to mitigate the vulnerability factors and address the core issues and not succumb to knee jerk reactions to the increasing prevalence rates. Such an approach would enable a deeper understanding of the ‘why’ of people behaviors and help to bring behavior modifications which can be initiated and sustained through the individual’s life term. These interventions could be - cognitive in nature (awareness of modes of transmission and risk behaviors); behavioral (self-determined safer behavior practices such as monogamy, condom use); role perception of self (responsibility towards present and future sexual partners and family) and lastly increase in self-esteem and social status (to enable individuals to be able to negotiate with regular partners on safer behavior practices). In the context of HIV/AIDS vulnerability results from personal, programmatic and societal factors that affects one’s ability to exert control over one’s health or well being (UNDP 2004). [23]
Personal vulnerability to HIV/AIDS focuses on the various factors in an individual’s development or environment that renders him/her more or less vulnerable such as physical and mental development, knowledge and awareness, behavioral characteristics, life skills and social relations. Programmatic vulnerability focuses on the contributions of HIV/AIDS programme towards reducing or decreasing personal vulnerability including information and education, health and social services and human rights programmes. Societal vulnerability focuses directly on the contextual factors that define and constrain personal and programmatic vulnerabilities. This includes issues such as political structures, gender relations, religious beliefs, violence and poverty and attitude towards sexuality. These three levels of vulnerability are interdependent and interlinked to each other.

Both risky behavior and environment are what translate HIV vulnerability into actual risk (UNDP 2004). Risk is seen as an objective hazard that exists and can be measured. The realist approach looks at risk as a scientific entity that can be measured such as number of sexual partners, type of sexual relations, measures of condom use and so on. If risk is seen as a continuum, there is low and high risk at the two ends of the continuum. The weak constructionist approach looks at risk as an objective hazard but advocates that it can be mediated through social and cultural processes (Oliver-Smith and Hoffman, 1999). The strong constructionist approach advocates that nothing is a risk in itself but instead looks at risk as a contingent product of historically, socially and politically created ‘ways of seeing’ (Lumpton, 1999). Risk is a complex concept is and is closely associated with the concept of vulnerability. An understanding of risk uncovers three aspects – eventuality of event, consequence of event and context of event. These three factors determine risk element involved in the event. The very notion of risk implies
action which will affect the future and it is the ‘uncertainty’ of future that creates the significance of risk assessment so that an informed decision can be undertaken. Cardona (2004) [24] includes reflections on the nature of knowledge, understanding of vision that substantiate different arguments and rationalization as to what we fear and as to the way we should act.

A response to the epidemic is one that simultaneously acts on decreasing risk, vulnerability and impact of the epidemic. Simultaneously, it should also aim to shift social norms, lessen stigma, and increase political commitment to address gender and economic disparities that fuel the epidemic. The expanded response to the epidemic shows the interrelationship between risk reduction, vulnerability reduction and impact reduction.

Figure 1.2 Expanded response to epidemic

Source: UNAIDS 2001

Decreasing the risk of infection slows the epidemic by focusing on behavior modifications and brings about change in situations where there is risk of HIV infection.
Decreasing vulnerability decreases risk of infection and impact of the epidemic by focus on access to health services, information on sexual behavior, life skills based HIV/AIDS education, addressing cultural practices and stereotypes, services supplementing legal and social norms to reduce stigma and discrimination. Decreasing the impact of epidemic decreases vulnerability to HIV/IDS by focusing on prolonging productive lives of individuals living with HIV/AIDS, decreases the discrimination and pauperization of surviving family members, increasing investment in education, care, social support and thereby increasing the capacity of the community to respond to the epidemic.

1.3.3 Gender norms and HIV/AIDS

*The activities that led to HIV transmission are central to who we are as men and women. Because of this, efforts to stem the spread of HIV are increasingly focused on understanding how culturally constructed notions of ender and sexuality shape realities.*

Brown J et al. (2005) [25]

The concept of gender holds immense importance in the study of HIV/AIDS in understanding risk behaviors and possible behavior modifications in the absence of any vaccine or cure to HIV/AIDS. Focus on prevention turns the limelight on to risk behavior and the process of changing or modifying risk behavior. In order to understand behavior it is important to understand the reasons behind it. Studies have shown that gender roles and masculinity and play a big role in explaining the reasons for men to engage in high risk activities that makes them vulnerable to the infection. Masculinity is important in understanding the risks taken by men namely multiple partners, drug abuse, alcoholism, and other high risk activities. Similarly, this gender concept is reflected in the limited
choices that women have to negotiate safer sex practices, be it a spouse or a sex worker. As women they are bound within the gender roles that define their social existence.

**Patriarchy and masculinity**

Indian society follows a patriarchal system which literally means the rule of the ‘patriarch’ or father- in other words a male-dominated society. This patriarchy enables men to control women’s productive and economic resources, reproduction, sexuality, mobility and so on. Millet 1972 was the first feminist to use the term to describe unequal relations of power between men and women. Walby (1990) defines patriarchy as “a system of social structures and practices through which men dominate, oppress and exploit women.”

Patriarchy and masculinity are sometimes fused together and their semantics tends to overlap because the dominant mode of masculinity is patriarchal and enactment of this mode produces patriarchal structures. Thus patriarchy is established through masculinity and underlying these two subconcepts is the concept of ‘power’. It is frequently proclaimed that one cannot understand men and masculinity without understanding power (Hearn 1992; Kaufman 1994).

**Deconstructing masculinity and power**

According to Fredrick Engels (1884) the origin of patriarchy goes to back to the division of classes and subordination of women in historical times. In the first phase of the society, ‘savagery’, human beings lived together and hunted together and there were no notions of private property. In the second phase, ‘barbarism’, with the development of agriculture and animal husbandry, division of labor took place with the men hunting and
women staying back to look after family and homestead. In the third phase, ‘civilization’, men developed weapons for hunting and started domesticating animals. The notions of private property developed. To ensure inheritance, mother rights were overthrown and women were domesticated and confined within the boundaries of the household. This is the period according to Engels when both patriarchy and monogamy for women were established. Women became economically dependent and double standards of morality in marriage started. Engels and Marx explain women’s subordination in economic terms. According to them once private property is abolished, patriarchy will disappear. Marxist-Feminists opine that patriarchy is a reflection of the structures governing economic production. Male dominance benefits capitalism as patriarchy rests upon fundamental control over women’s labor. The radical feminists do not agree with these postulates and consider gender dominance as the primary source of oppression and men’s power over women is regarded as the basic important organizing principle of social life (Firestone, 1971). Simply put, they consider patriarchy as institutionalized male power. This male dominance is reflected in the society through masculinity (gender concept) which is a social construct. It defines how men should behave, dress, appear, their attitudes and their norms. Power, control over others and leadership are considered as important markers of masculinity.

Brittain A (1989) [26] states “Men are commonly described as aggressive, assertive, independent, competitive, insensitive and so on….Men are seen as having natures which determines their behaviors in all situations.” While nature determines biological male and female, it is gender and society that determines appearances, attitudes, roles, responsibilities and rights. Sex Role theory postulates that inequality between men and women can be eliminated by breaking away from the traditional role model. Clatterbaugh
(1990) states that ‘just as women are socialized into being submissive, men are socialized into being dominant.’

Materialist theory holds that masculinity is socially reproduced within a historical context of gender relation. Masculinity and men’s roles are strongly identified with the public sphere. Masculinity is seen as socially constructed and thus points towards possibility of change through reconstruction of social relationships of gender in both public and private arena. New laws, redefining values and norms may challenge traditional masculinity and bring about change.

Thus the deconstruction of masculinity and power provides a deeper understanding of the concept of masculinity and power which goes hand in hand in patriarchal society. This behavior has to be understood in two contexts i.e. spatial and social contexts. The former talks of the need to situate masculinity in a particular location i.e. men do not behave the same everywhere. There are subtle differences in their behavior at home, at workplace among friends and so on. Within social context men are located within the class, gender relationships which dictates how they should behave. In order to conform to the gender norms, heterosexual men hold on strong to their predominant heterosexual behavior and identity. With the advent of AIDS, there is an emerging homophobia i.e. existing social practices that reinforces the oppression, discrimination against other sexualities such as homosexual and transgender. This leads to stigmatization of other sexual behavior and sexual minorities.
1.3.4 Risk perception and HIV/AIDS

Most human beings engage in some kind of dangerous events every day and when they realize that they are certainly placing themselves at risk, they would disengage with the activity. Studies by social scientists such as Cleary et al. (1986), Booth (1988) show that HIV/AIDS intervention strategies need to take into account the way people process and receive information about transmission of the virus and development of the disease. Very little is known about how people make sense of their sexual experiences and possible disease outcome. Risk perception refers to understanding the way in which the risk is shaped and constructed and this understanding has important implications for behavior changes and modifications. Thus risk perception is a crucial concept in HIV/AIDS studies as in the absence of vaccines or medication, prevention/ reducing the spread of infection remain the most viable option. Studies by Allard 1989; Becker and Joseph 1988; Emmonds et al. 1986 show that heightened perception of risk does result in behavior changes, although the effects may diminish over time. Thus risk perception is a fundamental concept that plays an important role in shaping intervention efforts aimed at reducing the spread of the disease.

Individual predisposition to take risks varies from individual to individual as does the knowledge and situation at hand. Often there is an element of unpredictability about the hazard and uneven distribution of knowledge and access to information. In such a situation, an individual is not able to define and understand the nature of risk. At the same time, individuals may lack the ability and opportunity to decide which risks affect them and to what extent.
A study by Starr (1969) [28] found that society seemed to accept risk to the extent that they were associated with benefits and what Starr termed as ‘voluntary’. Research found that humans tolerate substantially more risk when they engage in voluntary behavior. People are found to believe that they are more in control than they actually are. Langer (1975) describes this as illusion of control. He interestingly explains that they view the risk of winning lottery as higher if they pick the number themselves. Weinstein (1987) found that such unrealistic optimism about the outcome of an event exists for both men and women and across age and educational level.

There are two distinct theories about risk perception – firstly, the psychometric paradigm rooted within the discipline of psychology and secondly, the cultural paradigm supported by sociologists and anthropologists. The psychometric paradigm assumes that risk is inherently subjective i.e. risk does not exist out there. Risk is defined by an individual who may be influenced by a wide array of psychological, social, institutional and cultural factors and risk perception maybe subjected to testing. The social and cultural theories take a broader approach to understand risk and how it is shaped by social, political and cultural events. Weinstein (1989) opines that risk perception goes beyond the individual and it is a social and cultural construct reflecting values, symbols, history and ideology (Weinstein, 1989). Reinforcing this understanding (Boholm, 1998) states that risk appears to mean different things to different people (Brun, 1994) and actions and understanding about risks are learned by socially and culturally structured conceptions and evolution of the world, what it looks like, what it should be or should not be.

Studies by Drottz-Sjoberg (1993); Sjoberg and Drottz-Sjoberg (1994) [29] show that people make a clear distinction between risk to themselves (personal risk) and risk to
others (general risk). Personal risks are generally judged to be smaller than general risks, especially the so-called lifestyle risks, i.e. risks of smoking, drinking alcohol etc (Drott-Skoberg, 1993). Personal risks are seen as so small that they can be dismissed or ignored, and the behavior proceeds to various forms of pleasant or exciting experiences that can be quite dangerous and destructive. Personal risks thus pose a challenge in understanding the rationality or the lack of it, involved in various forms of addictive behaviors. For example – people who smoke may be aware of the risk to others but see a very small risk to themselves. Gender differences in risk perception are often observed and the trend shows that women perceive risks to be larger than men do (Davidson and Freudenburg, 1996).

Since people find it difficult to estimate and calculate risk on the basis of factual information, they rely on ‘cultural heuristics’ to understand risk perception. Heuristics are logical shortcuts that people use when processing information; they help reduce complex mental operations to simpler cognitive tasks (Kahneman et al. 1982). [30] These heuristics are derived from cultural meaning systems and form a part and parcel of people’s daily life and thus helps to faster decision making in the context of risk perception. Example cultural heuristics in HIV/AIDS risk assessment can be influenced by beliefs that the infection can only be transmitted by risky partners such as FSW and not general population, visual markers such infected person will have hallow cheeks and less body fat etc. The process of negotiation of risk shows how people organize their universe through cultural and social biases and choose what to fear based on their way of life and patterns of cultural and social norms. In a study in Sub-Saharan Africa, it was reported that for older men looking for HIV free girls, the notion that they themselves may be infected seems to lie outside of acceptable or even possible construction of risk
and identity. However, risk usually refers to individual risk and thus it becomes associated with choice, responsibility and blame on the individual rather than the society.

Tsasis, P and Nirupama, N (2008) in the context of HIV/AIDS hold that risk perception is linked to an individual’s predisposition to be risk-averse or risk-seeking and to the individual’s knowledge regarding the situation at hand. The unpredictability of hazards and uneven distribution of knowledge and access to knowledge in societies mean that people are not always in a position to define and understand risk. In other words, individuals may lack the ability and opportunity to decide whether the risk affects them and to what extent. Since different groups and stakeholders have different interests at the level of public debate, certain dangers are attached to particular threats when different perceptions of risk are created. Both social institutions and structures thus harbor the power to shape risk perception.

Having presented various perspectives to view risk perception, it is pertinent within the discourse of public health to state that although risk perception may be shaped by individual’s inability to accept risks that are involuntary and unfamiliar, the larger societal factors play an important role in shaping risk perception.

**Risk perception and social interaction**

Research studies by scholars such as Cadwell et al. (1989); Barnett and Blaikie (1992; Orubuloye et al. (1997) found that the severity of AIDS epidemic in Africa can be attributed to social and cultural barriers that inhibit behavior changes despite knowledge about the consequences of the disease and prevention methods. The belief that ‘death comes when it is due’ is widespread thus reflecting an attitude of helplessness in the face
of illness and death. According to Caldwell (2000), such beliefs and judgements are actively maintained by varied forms of social interactions, and individuals may experience pressure from peers to engage in risky behaviors. Studies by scholars such as Low-Beer and Stoneburner (2004) have also brought out a positive dimension of the social interaction wherein interactions have facilitated adoption of new behaviors. Studies from Malawi and Sub-Saharan African countries have brought out that social interactions play an essential role in forming an individual’s perception of risk of HIV/AIDS and their evaluation of benefits of behavior changes such as condom use etc., (Watkins, 2004). Studies by Manski (1995); Behrman et al. (2002) [31] found that individuals’ engagement in social interactions is often determined by their own attitudes and preferences. Social network partners are chosen not randomly from the population but are systematically selected according to observed and unobserved characteristics.

The concept of social influence emerges wherein preferences for sexual behavior, gender relations, or any other behavior relevant to AIDS are potentially affected by opinions and attitudes that prevail in an individual’s social environment. These processes may lead individuals to change their preferences in response to normative pressure after interaction with others about the threat of AIDS. In the context of HIV/AIDS theories of social interactions increasingly highlight that individuals do not make decisions in isolation but rather with others. These studies show that communication and interactions in social networks are important mechanisms through which individuals will learn about the disease, its implications and consequences and acceptable strategies for reducing risks (Kohler et al, 2007). [32]
Thus correlation between social network and risk perception is essential for a deeper understanding of how people’s risk perceptions are shaped which in turn can provide some insights into possible behavior modifications to reduce the HIV infection.

1.4 Theoretical models used in the study to understand HIV/AIDS

This section provides description of the behavioral and social models used to understand HIV/AIDS and human behavior.

1.4.1 Health belief model

This model was evolved in 1950s by I.M. Rosenstock posits that people will change behavior depending on their knowledge and attitude towards the behavior. All other behavior change models draw their premises from this model of health. This model suggests that an individual’s health behavior is guided by the perception about the behavior. Depending on the following beliefs, an individual will change behavior - perceived susceptibility to a health problem, seriousness of the disease, belief in effectiveness of the new behavior, perceived benefits of preventive action and barriers to behavior modification. Thus risk perception is a fundamental component of the health belief model. This model posits that perceived risk reduction results in behavior changes but does not address what accounts for origin or variation in interpretation of risk (Cleary et al. 1986). Knowledge and attitudes towards health behavior plays an important role in understanding the health practices and advocating for behavior changes for improved health seeking behaviors.
1.4.2 AIDS Risk reduction model

Risk reduction model developed by J.A. Catania posits that that behavior change takes place due to three main constructs – risk assessment, commitment to change and enactment i.e. taking appropriate action. This model looks at change as a process and individuals move from one step to another depending on the given stimulus. Individuals go through behavior labeling, commitment to change and finally the change. Within the context of HIV programming, behavior models consider that risky behavior reflects risk assessments and that by changing these assessments of risk, behavior can be changed (Bailey and Hutter I, 2006). This model is borrows from Social Cognitive theory which states that new behaviors are learned either by modeling the behaviors of others or by direct experience. The confidence that one feels towards enacting a behavior i.e. self-efficacy is a key component of the theory. This theory places the onus of behavior practices on the individual and thus responsibility of good or bad behaviors are placed on the individual as also the responsibility of behavior changes.

1.7.3 Ecological systems model

This model posits that successful interventions to promote health including HIV risk reduction have to address individual behavior and as well as address multiple levels surrounding individuals such as families, communities, institutions and policies. In other words, the ecological theory focuses on the macro perspective towards bringing changes such as advocacy, policy development, economic support and environmental factors. According to this model, behavior is determined by intrapersonal factors such as knowledge, attitudes, self concept and skills and interpersonal processes such as informal social network, social support systems such as family, work groups and so on;
institutional factors such as social institutions, relations between organizations, institutions; and lastly public policy such as national laws and policies.

These models are essential to understand how the concept of health and disease are placed and located by the social scientists in their attempts to unravel the vulnerability factors in the context of HIV/AIDS.

References


6. Times of India issue dated 10th June 2008


