CHAPTER – III
GENESIS OF HIV/AIDS

A. History of HIV/AIDS Development

Almost unknown ever before 1981, an elusive enigma, a disabling or life-threatening illness, a sensitive issue and a worldwide panic - Acquired Immuno-Deficiency Syndrome (AIDS) caused by Human Immuno-Deficiency Virus touches on so many different aspects of conscience and morality such as sexuality, sexual behaviour, freedom of the individual, protection of society, care for others, euthanasia, treatment or testing by force, use and abuse of drugs, suicide and so on. Hence, AIDS has been identified as a major crisis, tension, debate and a research priority all over the world.

With its deleterious effects on mankind, it was described as one of the most serious health problems. But indeed, AIDS is much more than a health issue. The health care crisis in many developing countries was already acute before the impact of AIDS. Poverty, malnutrition, poor health care, lack of respect for human rights, illiteracy, inadequate housing, discrimination against women and children, and unresponsive political system makes worse its impact on any given society. AIDS has an inordinate impact on the poorest countries, affecting their social, political and economic conditions. But AIDS as a serious issue had been quite sometime clearly ignored by politicians and by development technocrats. As such, we still lack concrete and detailed information about the real impact of the pandemic.
The world came to know for the first time about this new mysterious disease (AIDS) when the American scientists had published articles in the prestigious medicinal journal - The New England Journal of Medicine on 10\textsuperscript{th} December, 1981. The disease was reported in Los Angeles and subsequently in New York and California in previously healthy male homosexuals who suffered from Pneumocystis Carinii Pneumonia (PNP) and Kaposi's Sarcoma (KS) with clinical and laboratory evidence of immune dysfunction (Centre for Disease Control, 1981a, 1981b, Gottlieb, et al, 1981; Ansary, et al, 1989). And opportunistic infections caused by microorganisms that rarely give rise to diseases in persons with normal immune defence mechanism were also reported (National Academy of Science, 1986a).

By early 1982, still AIDS was known by a variety of names or acronyms. Some called it Gay Plaque. Others called it Grid (Gay-Related Immuno-Deficiency). The syndrome was first recognized among homosexuals not only in USA but also subsequently in European countries and Australia. However, when the disease was detected in groups other than gays such as intravenous drug-users, infected blood products and parental transmission, the staff members at Centre for Disease Control (CDC 1982) refused to call it GRID because they were aware that the disease was not restricted to homosexuals only.

To solve the problem of nomenclature, the experts met under the aegis of CDC in 1982 and came out with a resolution to name the disease AIDS, an acronym for Acquired Immuno-Deficiency Syndrome (Shilts, 1987). Among the heterosexual individuals, the first AIDS cases were recognized from central Africa and Haiti in 1983 (ASTPHLD, 1994).\textsuperscript{5} In African situation, AIDS is often called "Slim Disease"\textsuperscript{6} while in the bygone days people coined a new term called "Love Plaque" because it
killed people in large numbers as plaque and was thought to be caused by the sexual act. Abstaining completely from sex is the safest way of avoiding infection but this may be unrealistic for most people and even in reducing the number of sex partners, there is little guarantee that all the partners will always stick to each other. Strictly speaking, the term safe is incorrect as a few of the low risk activities described earlier are not completely 'safe' although they certainly reduce some of the risk. Some young people may not get married for several years or more, men and women away from home and sex workers for whom sex is vital source of earning. Before the discerning of HIV, AIDS by then was shrouded in mystery because the actual agent was not yet identified till 1983 and those who were infected were inevitably dying, because there was yet no known cure for it. This led to unprecedented panic among the populace. The disease has been spread first among the risk groups in an epidemic form and then to the general population in a pandemic nature.

The stories of ostracism, discrimination and people fleeing from AIDS victims are legion. Thus people started worrying about getting its infection from toilet seats and in buses and subways. Even doctors and nurses were affected by this mass hysteria. Many of them refused to treat anyone with the faintest suspicion of AIDS and hospitals Wards were deserted by other patients (Malaviya, 1990). The worst fathomless fears were that a person could get AIDS through the air, like catching a cold or flu.

Therefore, physicians, scientists and researchers have taken up a challenge to discover the mysterious of AIDS in the human society. These stories of AIDS and alarming responses of the world has led the European and American physicians and scientists to think of what could really be the main causes of the disease and
vigorously searched for its cause. Some of the virological laboratories around the world then started the arduous work of discovering the causative agent in right earnest. To mention a few, Paul Fiarimo at CDC, J. Levy in San Francisco, A. Karpas in Cambridge, Luc Montaigner at the Institute of Pasteur in Paris, Robert Gallo at the National Institute of Health in Bethesda, USA and Max Essex at Harvard, Boston were some of the scientists who took the challenge. Subsequently, as luck would have it, the special efforts made by Montaigner's and later Robert Gallo's group made it possible to grow the virus in the laboratories in bulk amount. Then it was believed to many working in this area that AIDS was probably caused by a certain microorganism.\(^{11}\)

Then just two years after the first cases of AIDS were described, the virus that causes AIDS was discovered in 1983,\(^ {12}\) almost simultaneously by three laboratories and given three different names such as Lymphadenopathy Associated Virus (LAV), Human T-Cell Lymphotropic Virus type-III (HTLV-III) and AIDS-Associated Retrovirus (ARV). It turned out that all the three viruses were very similar and were actually variations of the same virus, which in 1986 was given the single name called Human Immuno-Deficiency Virus type-I (HIV).\(^ {13}\) However, Montaigner's and Robert Gallo's group isolates have subsequently been found to be identical, and are now recognized to be the cause of AIDS. But still, there was a dispute between the two research Institutes as to who was the first discoverer of AIDS virus. In 1987, both scientists were given credit for the discovery and in 1991; Gallo dropped his claim to have discovered the virus. In the meantime, an international agent renamed the virus as Human Immunodeficiency virus (HIV) for AIDS was finally discovered to be HIV.\(^ {14}\) Today, the molecular structure of HIV and its response to treatment was
unlike that of two decades ago. Much had been advanced in the molecular and genetic variability of HIV. It has been classified into HIV-1 and HIV-2. According to a study made over a period of 6 years, persons infected with HIV-2 are 10-12 times less likely to develop AIDS than person infected with HIV-1.

More recently, it has been shown that HIV-2 is not only pathogenic than HIV-1, it is also spreads much slower than HIV-1. Despite early efforts to standardize the nomenclature of HIV, it remains inconsistent, and there are no widely accepted definitions for the HIV types. Some called it as strain and still others used it as sub-type or variants. But study on this aspect is out of the scope of the present study.

Almost immediately after the first case of AIDS was reported in the United States of America in June 1981, researchers at the CDC began tracking the disease backward in time to discover its origin. They ultimately determined that the first cases of AIDS in the United States of America probably occurred in 1977 (Biggar, et al; 1988). Several reports of cases resembling AIDS both clinically and immunologically have appeared in the literature (Katner and Pankey, 1987; Huminer, et al. 1987).

Another convincing first case of AIDS in United States may be dated back to the 1960s. This was known when a 15 years old boy who had anal sex was found to have been infected with HIV (Garry, et al. 1988). So, it is believed that HIV or genetically related virus may have entered several communities before the current epidemic. The earlier civilization had witnessed devastating global epidemic/pandemic with 'bubonic plaque' in the 18th century and the 'Spanish Flu' in the 19th century which had globally killed millions of people within a short period. Hence, the debate about the origin of HIV/AIDS has been mixed with questions of who, which country, which race, is yet to be blamed for starting the epidemic. Yet, suggestions and ideas on
where the HIV/AIDS virus could have originated first started led to a raging controversy including allegations of racism. Indeed, whenever misfortunes occur, we are liable to blame other people for which no evidence is required.20

As such, the debate about the origins of AIDS has not been helpful because it has created bitterness and diverted attention from the important task of prevention. So, what is more important than knowing where the disease came from is where it is going? 21 In fact, the origin of the HIV viruses and AIDS is still shrouded in a mystery and the actual origin is still remaining undecided. Blaming others for a problem as a substitute for tackling the problem itself, is a human characteristic. Further, the process of attributing blame does not always require evidence, and tends to focus on people who are not considered normal by the majority, especially minorities or foreigners. Epidemics of dangerous infections such as plague, smallpox, syphilis or even influenza have historically prompted social responses based on blaming others for spreading the disease by their "deviant" behavior.22 Blaming others may itself be a contagious psychological process leading on to stigmatization, scapegoating and persecution. The debate about the origin of AIDS is largely irrelevant to immediate action against the disease. Thus Professor Luc Montaigner, Co-discover of AIDS virus, regarded the theory as "not serious enough even to raise the hypothesis". The Soviet daily - IZVestia also criticized the Soviet press for spreading the false US laboratory origin theory.23

The first argument against it is that genetic engineering was not sufficiently advanced to develop such a man-made virus or home-made evil at the time HIV first appear. If one accepts the evidence for AIDS cases as early as 1957 or several years before 1980, it must have been in existence since the mid-1950s. Virologists are
emphatic that even if such a virus could be developed today, the science of genetic engineering in the late 1970s for this to be possible. Thus, virologists take seriously the theory that HIV is not the result of a scientific conspiracy.

So far, there is no substantive evidence whatever that this is where AIDS came from, where there are number of convincing arguments that this origin is unlikely in the extreme. The United States debate over the possible African origin of AIDS has appeared repeatedly in the third world newspapers. However, it is an evidence of racism and a determination to blame Africans. However psychologically comforting it may be, blaming other clearly offers no safety from the AIDS virus. The existing practice of blaming one another has been already seriously hampering the efforts to control AIDS. It is hoped that further research into the "origin", if continued will provide some clues to developing a vaccine against HIV, without which AIDS cannot be eradicated. Such research will also help to resolve the mystery of where this new and unusual virus came from.

The desire to know the origin of HIV/AIDS and its development cannot be suppressed as it may help the scientists and medicinal experts to develop some vaccine to combat the disease. At the same time, accusation and blame which are likely to retard further research and investigation for developing a vaccine need to be given up. We should be more concerned about the prevention and control strategies than become preoccupied with the question "where did AIDS originate". There have been many theories to find out when and where the first case of AIDS occurred though none so far had been proven in practice. However, in theory, it should be possible for us to find out its first origin since the most likely evidence or first and second hand in formations on HIV/AIDS has been made available from many sources.
today. Chronologically speaking, there are four main theories or hypothesis for the origin and development of HIV/AIDS. These schools of thoughts have given different opinions and vividly throw varied light on it. Such theories or hypothesis were popularly known as the following:

1. Isolated community theory;
2. Germ welfare theory;
3. Mutation theory and
4. Green Monkey / Simian theory.

**ISOLATED COMMUNITY THEORY:** In this theory, AIDS is believed to have been existing for decades and has been developed from an old human disease in a remote region of Africa and limited to small and isolated ethnic groups or population. There are few completely isolated peoples left in the world, mainly in the rain forests of New Guinea, Amazonia, and perhaps central Africa where the possibility and much speculation of the early locations of AIDS was focused with some evidence. They had acquired immunity to it. When it spread outside this group and reached people who had no such immunity, it became a killer disease.

Social mores of those relatively isolated population may not have been conducive to the rapid spread of the disease. The few cases that did develop could likely have escaped detection against the backdrop of multiple life threatening infections that are common in Africa. As to supplement, after the world War - II, the urbanization of Africa was accompanied by social changes and family disruptions, combined with the anonymity of urban life, all of which increased the livelihood of behaviours that contributed to the spread of sexually transmitted diseases.
In time, the prevalence of HIV increased sufficiently to make AIDS visible as a new clinical entity in Africa and elsewhere.\textsuperscript{30} Hence, the medical condition which was to be called AIDS began to be noticed in the late 1970s and early 1980s in several widely separated locations, including Belgium, France, Haiti, the United States, Zaire, Zambia, India, Thailand, Philippines etc.\textsuperscript{31} During the early stages of the AIDS epidemic the flimsiest evidence was used to blame AIDS on Haitians and African. There has been a strong reaction from African nations to the racism shown in many of these early pronouncements.\textsuperscript{32}

**GERM WELFARE THEORY:** This theory is based on a paper published by three East German Scientists in 1986. This report was taken up by many newspapers that HIV was produced by the American military as a germ welfare agent. But it was strongly denied by the United States government. This theory has been criticized because the technology for genetic engineering did not exist in the early 1970s when HIV was thought to have first started spreading.\textsuperscript{33}

**MUTATION THEORY:** It is impossible to tell in which country that mutation first took place. Viruses are continually changing and 'mutating' into new strains. It seems a highly likely hypothesis that a mutation took place in a virus to produce a new virus with the deadly properties of HIV. Searching through case records it has been suggested that the first recorded cases of HIV infection found have been in a New Orleans teenager who died with strange symptoms in 1969 and in a woman in 1959 from Zaire. However, there were probably additional cases of AIDS in other countries of which we have no knowledge.\textsuperscript{34}

**SIMIAN/GREEN MONKEY THEORY:** This theory holds as being responsible but the scientific arguments against the Simian hypothesis have not
become widely known. A variation of this theory is that the virus was presented in an animal where it did not cause disease and in some way was transferred to humans where it caused disease. There are several diseases that have animal reservoirs such as Lassa fever and Plaque. The animal that has received most attention as a possible source has been the African Green Monkey.

The evidence that appeared to support this is that the virus HIV-2 is genetically similar to a virus called 'Siamian Immuno-Deficiency Virus (SIV)' which was found in some monkeys kept for experiments in a laboratory in California. These were Asian monkeys but the virus could not be found in wild monkeys in their natural habitat in Asia. It was then speculated that they may have caught it from African Green Monkeys who were also kept at that laboratory. Hence, an alternative theory suggests that the African Green Monkey has been singled out as a prime suspect for the original source of the AIDS virus with the hypothesis that somehow the virus mutated and entered the human population when monkeys bite hunters in the attempt to capture them for food (National Academy of Science, 1986b).

Interestingly, there is evidence that SIV could get into humans. For instance; the Green Monkeys from Africa had shared cages with the Macaques in California since AIDS had already appeared in Africa but not in Asia, Kanki and Essex selected wild-caught African Green Monkeys for their research. In 1985, they announced that they had isolated a new virus, which they called STL-3 agm (agm for African Green Monkey), from wild African Green Monkeys which all appeared healthy and unaffected. Later, Kanki and Essex in collaboration with French and Senegal scientists, decided to look for evidence of such infection in Senegal, West Africa. In 1986, this international team announced that all the blood samples they had taken
from apparently healthy Senegalese people contain antibodies which reacted strongly with STLV-3 agm, the virus carried by African Green Monkeys. The virus isolated from these people was named HTLV-4. Thus, an intriguing and plausible theory came into existence.\textsuperscript{39}

At least three other groups of scientists in the United States, Germany and Japan say they also have isolated HIV like viruses from African Green Monkeys, although by early 1988 their work had not been publish. Their results have therefore, not been subjected to the scientific scrutiny which eventually discredited the work of Kanki and Essex.\textsuperscript{40} In October 1987, before Kanki and Essex's retraction had been published, a leading French virologist Luc Montaigner suggested to be Le Mode: "All these viruses have a common centre, or origin, which remains to be discovered". Thus, the Green Monkey virus STLV-3 agm, which did not seem to cause disease, might be the original source of AIDS. Somehow, it had infected West Africa people changing slightly into HTLV-4, but still not causing any noticeable disease. HTLV-4 then evolved into HIV-2, which causes AIDS, and then HIV-2 evolved into HIV-1, the killer virus linked with AIDS around the world.\textsuperscript{41}

However, this is not the case as the original AIDS epidemic is based on HIV-1 and the relatively smaller HIV-2 epidemic only appears later. The reason for doubting the Green Monkey is that SIV is closer to HIV-2 and the theory would predict that HIV-2 would have appeared first. But in contrast, the Simian theory or the African Green Monkey would leave the origin of the original HIV-1 unexplain.\textsuperscript{42} HIV-1 is the virus most frequently encountered and causes epidemic all over the world while HIV-2 is found mainly in West Africa and to a much less extend in some other countries. Incidentally, in India serological evidence for HIV-2 has been provided in the
Western and in Southern regions although the virus has not yet been isolated. Anyway, among the various Immuno-Deficiency Viruses there seems to be a closer relationship between the SIV and the HIV.43

On the other hand, there is evidence of isolation from a Liberian agricultural worker of an HIV-2 virus that is much more closely related to SIV, than to other HIV-2 strains. Simians' viruses have been obtained from captive monkeys used for laboratory experiments and also from feral monkeys. It was thought that the virus might have been transmitted from Sooty Mangabeys or wild Mandrills, living in the coastal forest belt of West Africa, the areas where HIV-2 is prevalent.44 Hence, it could have occurred during some fighting among monkeys as they might often scratched and drawn their blood or some accidental leading to bleeding might have occurred.45 Similarly, eating, hunting, trapping and other sorts of illicit exposure to monkeys may facilitate transfer of virus. Indeed, human being engaging in sexual relationship with animals is not a new phenomenon. Even people from several parts of India have spoken about this practice in rural India. Although this practice is not normally reported, many young people are believed to engage animals such as sheep, goats, buffaloes, cows and dogs for sexual activities. Yet, no incidence of any diseases crossing over from these animals has so far been reported.46

In some African countries, for sexual stimulation, the male blood for males and the female monkey blood for females inoculated directly in the public area, in the thighs and back were supposed to have transmitted the monkey virus. Some of these viruses belong to retrovirus and were the so-called slow virus because they take a long time before they manifest themselves as a clinical entity. An important characteristic of Lentiviruses has been their species specificity; this means that the cat virus is likely
to cause disease only in cats and the sheep and horse viruses only in sheep and horses respectively. Thus, we can also get rabies virus from dogs, cats and even from monkeys. Similarly some herpes viruses from monkeys can also infect us. There are a few examples, unusual in the part of Lentiviruses and uncommon which cross the species barrier as is thought at present. Studies on genetic relatedness or scrutiny of phylogenetic trees using computer analysis confirm the possibility of such transmission. In fact, it might have occurred at one point of time. That is to say that the Chimp virus evolving into HIV-1 and the SIV from Sooty Mangabeys or mandrills into HIV-2, could have been a single-time affair.

Among all the monkey business, Sooty Mangabey's appeared to be a potential ancestral candidate, at least for HIV-2. Sooty Mangabey, quite a handsome looking animal may partly be the reason why some people keep these as pets. From the Phylogenetic tree, some workers have considered the Simians viruses as a possible ancestor of SIV and HIV. But African Green Monkeys captured in Kenya and Ethiopia had also yielded a retrovirus termed SIVAGM. These monkeys and wild mandrills from Gabon showed no illness themselves but did carry the virus in the wild.

Incidentally, HIV-2 is not only much less pathogenic; it is shown to be spreading much slower. This is the kind of relationship viruses must like the best as they can survive as long as the infected animals live. The longer they live, the better for the virus. In contrast, the Asian Monkeys (Macaques) seem to suffer from an illness similar to AIDS in human. Consequently, they provide a very useful experimental model for HIV/AIDS (Advances in Immunology 52: 425-474, 1992). With the recognition that the African Green Monkeys are (potential) virus carriers, there
emerged a hypothesis connecting the origin of AIDS with the use of polio vaccine. This vaccine for polio viruses had been derived from the primary kidney cultures of African Green Monkey's.

However, the argument against this hypothesis-polio virus vaccine being contaminated with some SIV retroviruses-is that hundreds of millions of people (mostly children) vaccinated throughout the world have remained free from AIDS. As it so happens, some scientists forwarded a suggestion that the virus and thus AIDS might have entered the human population via direct inoculation of blood containing a malaria parasite from infected Chimpanzees including some Sooty Mangabeys into human prisoner volunteers supposing one of these animals harboured a retrovirus similar to HIV-1 (Chimp SIVcp2) or HIV-2 (Sooty Mangabey SIV), causing AIDS in human.

In an interesting presentation, Charles Gilks proposed this hypothesis. He traced the experiments carried out in 1939 and also in 1954-55. But such hypothesis could linger only as an interesting possibility. The time lapse of 40 to 50 years also seems right but it would be difficult to obtain any evidence in one way or the other. Thus, the scientists in 1988, who thought they had isolated a similar virus to HIV, from wild African Green Monkeys announced they had made a mistake.

So far, almost all studies seem to have been made on HIV strains (both HIV-1 and HIV-2). But a hypothesis is to be based on a solid foundation of scientific facts. It should also explain all that has happened earlier and/or presented scientifically and should not be contrary to any established features and facts. Steve Sternberg report stated that Myers found HIV isolates from Gabon and thus suggested that Gabon could be considered as the epicentre or the source of AIDS in the world. However,
these hypothesis are unlikely to get tested and therefore, anything goes as long as we have some fun. Almost any hypothesis, however convincing it may appear, will probably remain untested and therefore, unconfirmed. After all, research on how a virus could have originated and how the seemingly new disease syndrome emerged on the global scene might help in understanding other such emerging public health problem.

Indeed, AIDS constitutes a variety of clinical signs with objective evidence that can be observed by a physician and a symptom with various physical and mental complaints-reported by the patient. It also has a wide range of the so-called AIDS indicator diseases and opportunistic infections and cancers, which start causing diseases only when our natural defense mechanism and immune system function abnormally. Hence, nothing definite could be said in one way or the other. In these circumstances, retrospective investigations have been carried out on stored Sera and other material which were collected from different countries for an entirely different purpose. Some of the other information are available in good quantity and quality yields very useful information. For example, in Sera from Africa collected to study viral haemorrhagic fevers at CDC - a sample taken in 1959 from Zaire contained HIV-1 antibodies. AIDS was suspected in seaman and his family from Norway in 1960s who died in 1976.

Therefore, the earliest case was still considered to be from Africa, until 1990, when the information about a seaman from Manchester, England was published. This patient had died in 1959 with an unexplained immuno-deficiency and with some typical opportunistic infections. Based on this scanty information, one may assume that AIDS could have started in the 1940s. Of course, we cannot categorically say
there were no cases of AIDS earlier because they might have occurred in a scattered way here and there - what we call sporadic cases and therefore, might have gone unrecognized.\textsuperscript{61} It seems, the virus has always been presented pre-existent in humans but remained unnoticed and confined to an isolated group of people. But, it might have had an extremely low prevalence or low virulence or both.\textsuperscript{62} It is sad but also true that internationally, Haiti became the first developing country to be singled out by international publicity as the possible place of origin of AIDS while some doctors began to suspect that AIDS might have existed for many years, unnoticed in tropical Africa.

Today, however, medical opinion has totally abandoned the idea that AIDS originated in Haiti while it seems very likely that some homosexual tourists from the United States picked up the virus by having sex in Haiti, it seems equally probable, that others also took AIDS in Haiti and left it there. Now, there is also a strong opinion among scientists and others that the AIDS epidemic is as new to the African continent as it is to the rest of the world. A series of serological studies, using sensitive and specific blood tests subject to experienced interpretation have failed to find high prevalence of the AIDS virus in Africa before the mid 1970s, exactly the same situation in United States and Europe. On the evidence available to the date, the theory about AIDS as a disease was more widespread in Africa than it was in the United States and Europe before the 1980s appears to be a premature conclusion reached on the basis of faulty blood tests.\textsuperscript{63}

Indeed, AIDS is a disease of civilization resulting from certain changes in human behavioural patterns or changes in the life styles of the people. It does not necessarily have to be sexually transmitted diseases. In the ultimate analysis, human
behaviour factors might have ignited a slow smouldering into a raging life. Rapid urbanization, breakdown of old family systems and values, sexual promiscuity, emancipation of gays (no more fear of the law at least in the Western world), rapid air and other modes of travels, massive use of blood transfusions (especially in African countries), unscrupulous trade in blood or blood products, and selling of organs, indulgence in self-injectable psychedelic drug—all must have participated in fanning the fire. At the same time, the virus must have been good and ready to spread into human.64

Of all the myths associated with HIV/AIDS, its origin provokes the most fantastic and contentious theories. Among the more colourful speculation is that HIV came from outer space on a meteoric.65 In fact, in a broader sense, the natural history does not just begin with its infection and end with the death of the ailed person. To an extent, the problem behaviours of HIV disease and the emotional and economic trauma left after the expiry of the patient may also be considered as the end stage of it.66 In order to have a better understanding or various reasons on HIV/AIDS development and its origin, classification and staging of the disease have been needed for persons dealing with AIDS patients.

Several terms and classification systems for HIV infection have been described (CDC, 1982). Among other reasons for staging HIV infection, the most important of which is management of patients with timely medical therapy and public health projections all over the world.67 As the epidemic evolves, more of the previously asymptomatic people become ill, and also more non-infected people will become infected. This drastic change prompts us what people is going to face in near future if
attempts are not made to slow down the speed of the virus by changing the life style and risky behaviours of the people.\textsuperscript{68}

\textbf{B. How the disease / Virus Effects}

The surface of HIV/AIDS is specially shaped but the clinical signs vary according to the germ responsible and the organ it affects. As such, the longer we study HIV/AIDS, the more we understand the progress of the diseases/virus and its effects. Thus, it is important to note that not every HIV infected person goes through each stage and the timing of his or her appearance differs from person to person, and also the opportunistic infection differs from patient to patient. Indeed, the rate of profession in Asia is unclear because AIDS was found here only a few years ago and the survival period greatly depends on the quality of public sanitation, housing, health care support and nutrition. So in India and in other parts of Asia, survival is likely to be short.\textsuperscript{69} It is likely that the infected cells in semen or vaginal fluids are the main source of HIV transmission during sex. Since then, each cell infected by HIV/AIDS becomes a biological time-bomb travelling in the blood stream. At this point of time, the effect of the virus is finally revealed into hundreds of thousands or millions waiting to explode.

Since then, infected white blood cells become factories for more viruses, instead of factories to help the body make antibodies. Yet the trouble is that despite our modern science and technology, it is almost impossible to detect an infected cell. They look identical from the outside until they are dying. They were something that does not breath, does not need food, does not live but never dies; yet rapidly multiplying into hundreds of thousands and thousands of millions. These infections are nightmare for doctors and patients. The germs may be hiding deep in a lung or
hiding in the fluid covering the brain and the spinal cord or hiding in the brain cell. Thus, HIV/AIDS can hide anywhere and generally get infection to the chest, lungs, nucleus or brain cells and most commonly to the skin. Such a strange germ is silent victim, unnoticed, unrecorded and incredibly rare except in AIDS.

As the disease/virus progresses, the person develops other conditions and problems related to HIV/AIDS such as simple boil, warts, mouth sores, or red skin, herpes, cough, fever, headache, giddiness and may feel overwhelmingly tired all the time, have high temperature, night sweats, weight loss, strange infection of diarrhea and sometimes damage of heart organs. Yet no other cause is found and blood test will usually be positive called ARC (AIDS Related Complex). The damage happens gradually and they develop difficulties in thinking, difficulties in co-ordination balance and moving, and changes in behaviour. As a consequence, they will be violently sick and becomes confused, forgetful and cannot even remember a telephone number for two seconds but aware of his shortcomings. They will get up in the night, feel ill and tired and asked for breakfast. Good friends, team of nurses and volunteers manages and has to put back to the bed.

The reason is quite obvious. A very small number of HIV/AIDS can damage many parts of the body, but the brain in particular and its victims causing dementia. Brain cell are destroyed resulting in progressive loss of memory, impaired thought processes, personality change and sometimes incontinence or in a state of inconsistency. Such serenity requires constant care while the victim lives. Some patients from home care gradually become more unwell and were fighting breadth and also have become frightened. They were readmitted to Hospital, despite their therapies and dies within or after a stipulated time. Contradictorily HIV/AIDS can
develop differently in children. Some children seem able to live with HIV infection for years, and children who later test negative may still carry HIV. If first infected in the womb, the child may regard HIV as part itself and not react to it.  

Similarly, a five years old Los Angeles boy who at birth was infected with the HIV virus has now been declared virus-free, according to a study by the University of California at Los Angeles (UCLA). According to Yvonne J. Bryson, the principal researcher of the study and a pediatrician and member of UCLA AIDS Institute, tests showed that the boy was HIV positive for at least a month during his first two months of life. But later tests found no sign of the virus. Bryson believes it is the first well-documented case of an HIV-infected infant somehow eliminating the virus from his body by his first birthday without any medical intervention. Surprised doctors could offer no examination but they are studying the unidentified body's immune system for clues that could help others afflicted with the deadly virus.

C. High-risk and Low-Risk Group Behaviour

Undoubtedly, we have heard a lot about the infection of HIV/AIDS and its consequences. No wonder we might be confused or frightened about the chance of getting this dreaded disease. The truth is that there is not only any mystery about it. Today we know exactly how this infection is spread from person to person and how it is not spread. We also know exactly which people are most likely to get it and which people are not. In many advanced countries, people living with HIV are that potentially society's most effective AIDS campaigners, educators, counselors, and care givers. Even without publicly declaring their HIV positive status, they can contribute their unique valuable insights to AIDS prevention programmes and self-help care and
support groups. If they feel able to declare their HIV positive status openly, the impact of their work can be even greater. However, most people in India who know themselves to be HIV positive are reluctant to join a support organization because they are afraid this will result in their HIV positive status becoming known.

Thus, they remain cut-off from the information, care, counselling and support they need, and may be more likely to be continued practising high-risk behaviour. In other words, infected people with HIV and undergoing treatment continued to be engaged in high-risk behaviour such as sex without condoms, sharing of needles/syringes/infected piercing instruments. Generally, the pattern of sexual behaviour, injecting drugs use, rural-urban migration etc has had a particular impact on HIV/AIDS. The epidemic will exact a terrible tool of pain, suffering and grief on individuals, families and communities not only in India, but throughout the whole of the human family worldwide.

In the western world, many citizens of the so-called ‘mainstream general (heterosexual) population,’ lay people and politicians alike consider the disease self-inflicted. And no significant causes of heterosexual transmission were documented, many people including decision-makers, did not feel concerned. They did not care. Thus, the largest numbers of AIDS cases in the western are till homosexual and bisexual males and intravenous drugs users. By and large society rejects these forms of behaviour and consumption. This rejection takes on different forms, including negative feeling in face to face contact.

In India, AIDS is still a virtually invisible epidemic. Some have overcome this problem by focusing on the widespread and readily acknowledged problems of STDs. Any forms of safer sexual behaviour such as abstinence, mutual fidelity, condom use,
non-penetrative sex were also an effective form of HIV/AIDS prevention. However, the many Indian NGOs vary enormously in their purposes, objectives, size, strategies, geographical scope and area of activity. Thus in most cases, some staffs of the NGOs were initially unconvinced of the importance of HIV/AIDS as a health and development issue in India, others were reluctant to discuss sensitive issues such as sexual behaviour, or nervous about distributing condoms and demonstrating their use in public. Some were uneasy to combat discrimination and also working with stigmatized groups such as women in prostitution, homosexual men and injecting drug users. At community level, staffs faced the problem of how to convince people of the need for behavioural change for their lives and protecting their health. Thus AIDS problem had been a twin problem among the group behaviour.

In general, there are high-risks and low-risks group behaviour which may be briefly discussed with the following example as under:-

**High-Risk Group Behaviour**

The activity of having sex under the influence of intoxicants were a high risk because one cannot be sure whether condoms are used in the first place or used properly in the event of the person remembering to use one. However, it would be of no risk if it is between two uninfected partners. The activity of buying blood from a commercial blood donor is a high risk since the behavioural patterns of the commercial blood donors are not always known and it is possible that the screening of blood might not indicate the presence of HIV. The activity of having many sexual partners is definitely a high risk as more number of partners increases the possibility of acquiring HIV. Over 80-90% of the HIV transmission in the country takes place through sexual contact. The activity of liberated girls on oral pills is a high risk as oral
pills are no protection against HIV/AIDS/STDs. Also the liberated girls do not insist on condoms. The activity of HIV infected person wanting to have a child is a high-risk behaviour as the person may transmit HIV to his or her child as well as the spouse, since usage of condom is ruled out in this case. Moreover, the chances of the child becoming an orphan are high. The activity of having sex with a neighbour without a condom is a high risk as no one can be guaranteed to be HIV free, even if it is your neighbour.

The activity of having sex with a truck driver and with an expensive call girl (commercial sex worker) is a high-risk behaviour. HIV does not differentiate according to the economic status. It is the behaviour that exposes you to risk. The activity of anal sex is a high-risk behaviour. This type of intercourse involves the rectum, thin, easily and richly supplied with blood vessels, which is not naturally designed for sex. During such an act the possibility of wear and tear is great which provides for an opportunity for the virus to enter the body easily. The activity of using vaseline/hair oil for lubricating a condom is a high-risk behaviour. Condoms are made up of latex rubber. Any oil-based lubricant chemically reacts on this rubber and may make microscopic holes, which are enough for HIV to pass through; only water-based lubricants should be used. Lubricated condoms contains enough qualities of lubricants however, one could use saliva if more lubrication is required. The activity of using condom only with wife and not other is a high-risk behaviour. It will only reduce the possibility of your wife not getting the infection or passing it on to you.

You may still acquire the HIV virus from others. The activity of sharing needles/syringes/infected piercing instruments with a group of injecting drug users is a high risk behaviour. The practices of such will increase the chances of HIV
transmission as they can contain minute amounts of blood which may have the HIV virus. The activity of breast-feeding is a high-risk behaviour since mothers can pass HIV to their babies through breast milk. HIV is transmitted through the exchange of blood and blood products or through body fluids.

Low-Risk Group Behaviour

The activity of having an injection is a low risk if the needles/syringes are sterilized. The chances of infection through tattoo needles/syringes are very low but one must not eliminate the chances of infections, especially in a group situation. The activity of caring for someone who has HIV/AIDS is a low risk behaviour. HIV/AIDS can not be transmitted by casual contact or by caring the helpless or the infected patient. The activity of hugging or kissing or deep kissing is not a high risk behaviour as long as both of them are not bleeding in the mouth or have deep cuts or wounds. However, it should be remembered that there is very little HIV in saliva. The activity of oral sex is a low risk behaviour. The chance of HIV transmission is low.

Even in such a situation the use of a condom is advocated. However, taking infected vaginal fluid or semen into the mouth of a man or woman is the riskiest kind of oral sex. The risk for HIV infection during oral sex is due to HIV being absorbed by the mucous membranes of the mouth or through a sore or other opening. The activity of using public latrine/bathroom/urinal/telephone etc is a low risk behaviour since these casual contact cannot transmit or pass HIV/AIDS to others.

Being bitten by mosquito that has bitten someone with HIV is a low risk or no risk. There has been no documented proof of HIV transmission by mosquitoes. Mosquitoes only suck blood and do not inject blood. HIV is a human virus and cannot
live in the body of a mosquito. The activity of blood donation is a low risk behaviour since donating blood does not cause transmission of HIV. The blood collecting bags are disposable and sterilized and most of them were kept in the blood bank. The youth should come forward and donate blood as it decreases the dependence on professional blood donors. With increase in voluntary blood donation, more amount of HIV tested blood would be available at the blood banks which can be used in emergency situation. Nevertheless, in many countries drug users are badly infected, others prostitutes and sex industry workers; and in other countries, homosexuals.

Yet the number of people not in a "high risk group" who acquired HIV from heterosexual intercourse is growing very fast. So rather than talk about high-risk group it is far better to talk about high-risk practices, sexual or otherwise. It is well recognized that disadvantaged and marginalised group such as low-income woman, migrant workers, refugees, injecting drug users, sex workers etc are most vulnerable to HIV. Many millions of Indian women are at high risk of becoming infected with HIV through their husbands, who are likely to have other sexual partners while working away from home. Even after marriage, it is not unusual for men to have sexual partners other than their wives.

In contrary, growing numbers of Indian women who have had sex only with their husbands are now being infected with HIV. In Pune, a study in 1994 found that 14% of married women with STDs- none of whom reported sexual contacts outside their marriages- were HIV positive. A considerable number of family women also sold sex without the knowledge of their families. They do so out of dire poverty or to supplement the family's meager income. Thus, until people feel the desire to protect themselves and empowering themselves to change their behaviour, simply providing
Informations and services will only make a little difference to the spread of HIV/AIDS. Increasing numbers of pregnant women are testing positive for HIV. For example, at the HIV Sentinel Surveillance Centre in Salem district, Tamil Nadu, HIV prevalence among pregnant women rose from 0.1% in September 1994 to 0.9% in October 1995.

Similarly in a recent report of Churachandpur district in Manipur, the weekly Frontier Weekend said that about 460 people have since died in Churachandpur due to AIDS and its related diseases and the figure is rising. There are about 241 children who have been orphaned and 102 women were also said widowed because of the disease. The report also said that there may be about 90-100 sex workers within the town besides the call-girls. Thus, AIDS related deaths occur almost on a daily basis. Director of SHALOM, Churachandpur, Rev (Dr) V L. Muana said that the problem is inseparably tied with poverty and unemployment and urged against attacking stigma (socio-economic) issue on the infected persons.

More importantly, it is interesting to note that women are at a greater risk for getting HIV/AIDS than the man. The reason is quite obvious. HIV exists in vaginal fluids and the mucous membranes that line the vagina, rich with blood vessels and cells can be easily infected with HIV. When having sex during menstrual period, semen can also carry the highest amount of HIV being found in infected blood and the mucous lining of the vaginal provides a large surface for HIV infection during vaginal intercourse. This can be twice or even 10 times as likely when compared with risk from women to men. However, it does not mean that men are at low risk.
It is worth remembering that safe sex is a health issue and a right—not a moral judgement on any one's behaviour. Thus, certain factors need to be weighed up against possible risks. Such were related to the following:-

(a) You can say, "Sorry, no condom, no sex."

(b) I would be happier if you use a condom.

(c) I have made the decision to practice safer sex.

(d) You can say, "Sorry, no sex during menstruation."

(e) You can say, "No risk behaviour to avoid AIDS."

Though women are at greater risk, women can take their own time to know their partner and to collect accurate information about sexual intercourse, contraception, HIV and STDs. Only then women can be at risk or no risk behaviour.

**Women at risk behaviour**

1. Having multiple sex partners.

2. Having sex with a person who has multiple sex partners.

3. Sharing unsterilised needles and syringes.

4. Getting untested blood transfusion.

5. Having sex with a person who is an injecting drug user.

**Women at no risk behaviour**

1. Abstinence from sexual contact before marriage.

2. Sex with one uninfected and faithful partner.

3. Use of condom in sexual relationship.

4. Not sharing of used needles and syringes.

5. HIV free blood transfusion.
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