

CHAPTER II

ESSAY

Increasing prevalence of HIV infection among Young people in Myanmar

2.1 Introduction:

AIDS has become a global health crisis. At present a total of 168 countries have reported HIV infection to WHO. Myanmar faces with the problem of AIDS. The community, as well as, the individual person infected with this deadly virus will encounter medical, social and economic problems. At present, medical and social problems are more apparently seen in most communities where AIDS have appeared. As the HIV infection spreads into 15 to 40 years age group certain communities and villages are bound to suffer from the economic consequences of AIDS along with the medical and social problems. The long incubation period of AIDS is masking the potential impact of this deadly disease.

Although AIDS has had an enormous impact medically, culturally and economically on all countries of the world, the disease has taken its greatest toll on the developing countries. Even though the largest number of people infected with HIV are in sub-Saharan Africa, the most rapid growth of HIV infection during the 1990's has been in South East Asia (Quinn, 1995). It is now estimated that there are three million individuals infected in this region. In Myanmar, in the absence of resources needed to conduct more representative surveys, sentinel surveillance data (although not appropriate for extrapolations) has been used to estimate the number of HIV infected persons which now stands at approximately 350,000 (Prevention and Control of HIV/AIDS in Myanmar, 1996-1997, Department of Health, 1996). Like all countries in

the world, Myanmar also faces with the problem of HIV/AIDS. HIV/AIDS is now appearing in all the different social classes in Myanmar. It is also currently seen in high-risk behavior groups in all parts of the country and begins to spread into the low risk population groups. In coming years as more and more of those previously HIV infected individuals come down with AIDS, the disease impact will be more visibly felt in the coming years in Myanmar.

2. 2 HIV/AIDS Situation in Myanmar

Prior to 1992, data regarding HIV/AIDS in Myanmar was obtained mainly through surveys conducted in certain areas where activities relating to high-risk behaviors are seen to be occurring. The sentinel surveillance program was started in March of 1992 in nine towns. At present sentinel surveillance activities are being carried out in 21 towns.

In Myanmar, the first HIV positive case was reported in 1988 and up to December 1995 the cumulative total of HIV infections was 11,586 and the reported number of AIDS cases was 1,093. Males comprise 88% of all HIV infections and females 12%. The highest number of HIV infections among the age of group 25-29 years (29.9%), followed by 20-24 years (24.2%), 30-34 years (21.1%) and among 15-19 years (5.7%).

Among the AIDS cases males account for 86% of cases and females 14%. The age distribution was highest among 25-29 years age group (28.6%), followed by 30-34 years (26.4%), 20-24 years (11.5%) and 15-19 years (0.78%). The main routes of transmission for AIDS cases are intravenous drug use 54.8%, heterosexual transmission 36.8%, blood transfusion recipient 0.9%, bisexual 0.3% and others 6.2%.

It is seen that very high rates of HIV infections are occurring in the intravenous drug users. In certain towns like Bhamo and Myitkyina, over 90% of the drug addicts are already infected when they come in for treatment at the drug treatment centers. Table- 1 illustrates the HIV seroprevalence rates identified in four sentinel surveillance sites during 1992-93. Rates in Myitkyina and Manadalay have increased over this period. The rate in Yangon, although high, has remained constant. In Taunggyi, the HIV prevalence rate among IVDUs significantly decreased during the same period.

The HIV infection rates among commercial sex workers has been observed to be increasing from March of 1992 to September of 1993. Table-2 shows this increase, particularly in the Manadalay sentinel population where rates increased from 4.5% to 15% from March 1992 to September 1993.

When looking at the data of male STD patients, HIV seroprevalence rates ranged from 0 to 23% with considerable variation within sites due to small sample sizes. Figure 3 illustrates the nine original male STD surveillance sites where four observations have now been obtained over the 1992-93 period. In Kawthaung the infection rates have been increasing, but other sites have been too variable to make comments regarding long term trends. Among new military recruits the HIV seroprevalence rate increase from zero in March 1992 to 0.9% in September of 1993.

Male IDUs with an age range of 15-19 years comprise of 40% of estimated male HIV infections and 37% of the IDUs have been found to be HIV infected. Therefore, preventive education regarding risks of HIV and risk reducing behaviors must be targeted at risk seeking adolescents.

Table 2-1: Mean and annual HIV seroprevalence rates among the high and low risk group

Sentinel group	1992 %	1993 %	1994 %	1995 %
IDUs	64.0	66.8	59.4	55.4
CSWs	4.7	9.8	13.8	18.2
Male STDs	7.8	9.2	9.9	10.0
Female STDs	2.7	3.7	4.7	5.2
MCH patients	1.9	2.3	2.7	2.2
Military recruits	0.56	0.67	0.71	0.72
Blood donors	0.37	0.47	0.53	0.53

Source: (Department of Health, 1996)

Among the CSWs the highest number of HIV positive were among the 25-29 year age group (34.3%) followed by 15-19 years (28.6%) and 20-24 years (20.0%). Among the female STD patients the highest HIV positive was among the 20-24 year age group (30%), followed by 25-29 year age group (26.7%) and 15-19 years (13.3%). Among the male STDs the highest HIV positive was among the 25-29 years (30.4%), followed by 30-34 years (20.3%) and 15-19 years (5.5%). Thus there is a definite problem among teenagers 15-19 years, as a significant number of them are HIV positive in each of the high risk categories, i.e. IDUs, CSWs, Female STD and Male STD patients.

2. 3 Definition of young people

The term " adolescence" has been defined as including those aged between 10 and 19 years, and "youth" as those between 15-24; "young people" is a term that covers both age groups, i.e. those between the age of 10-24(WHO: 1989:7). About four out of five of the World's young people today live in developing countries where more than half of the population is under the age of 25. The World Health Organization (WHO) has estimated that, as of mid -1995,more than 18.5 million HIV infections have occurred since the late 1970s or early 1980s. For the year 2000, the current WHO projection is that a total of 30 to 40 million HIV infections will have occurred in men, women and children. About 50 percent of all HIV infections occur among young people between 15 to 24 years old. Worldwide, about half of all HIV infections are estimated to occur in young people under 25 (WHO/UNICEF, 1995).

2. 4 What is the problem?

Nowadays, HIV/AIDS is the most serious problem for young people in Myanmar. According to sentinel report, HIV infection prevalence has increased from the previous year. Who develops HIV infection, where does HIV occur and when does HIV occur are collectively three questions, which serve as the basis for a descriptive investigation of HIV/AIDS. Answers to these questions characterize the distribution of HIV/AIDS by person, place and time.

2.4.1 Person, Place & Time

The age distribution of HIV positive reported in Myanmar during 1988 to 1995 showed the highest number of HIV infections among the age of group 25-29 years (30.42%) followed by 20-24 years (24.55%) and among 15-19 years (5.74%) as shown in table 2. Therefore, most HIV infections occur between age of 15 to 29 years. The highest rates occur in urban area where young people often migrate to urban area hoping to find better opportunities for jobs and education

Table 2-2: Age and sex distribution of accumulative HIV positives (1988 to March 1995)

Age group	Male		Female		Total	
	No	%	No	%	No	%
0-14	19	0.22	13	1.10	32	0.33
15-19	339	3.92	226	19.10	565	5.74
20-24	2048	23.67	367	31.02	2415	24.55
25-29	2706	31.27	286	24.18	2992	30.42
30-34	1939	22.41	169	14.29	2108	21.43
35-39	1002	11.58	79	6.68	1081	10.99
40-44	358	4.14	27	2.28	385	3.91
45-49	136	1.57	10	0.85	146	1.48
50-54	55	0.64	5	0.42	60	0.61
55-59	13	0.15	0	0.00	13	0.13
60&>	7	0.08	1	0.08	8	0.08
Unknown	32	0.37	0	0.00	32	0.33
Total	8654		1183	9837		

Source: National Health Plan (1996-2001) MOH

2.5 why do they happen HIV infection?

In Myanmar, the total estimated population of 45.57 million, the male population was 22.63 million and female population was 22.94 million. A review of the age distribution of population are that 15.25 million are in the age group of under 15 years, 26.86 million are in the working age group of 15-59 years and 3.46 millions are in the age group of 60 years and above. A major public-health challenge in the 1990s is to educate young people about the risks of HIV infection and steps they can take to avoid it (DiClemente, 1990).

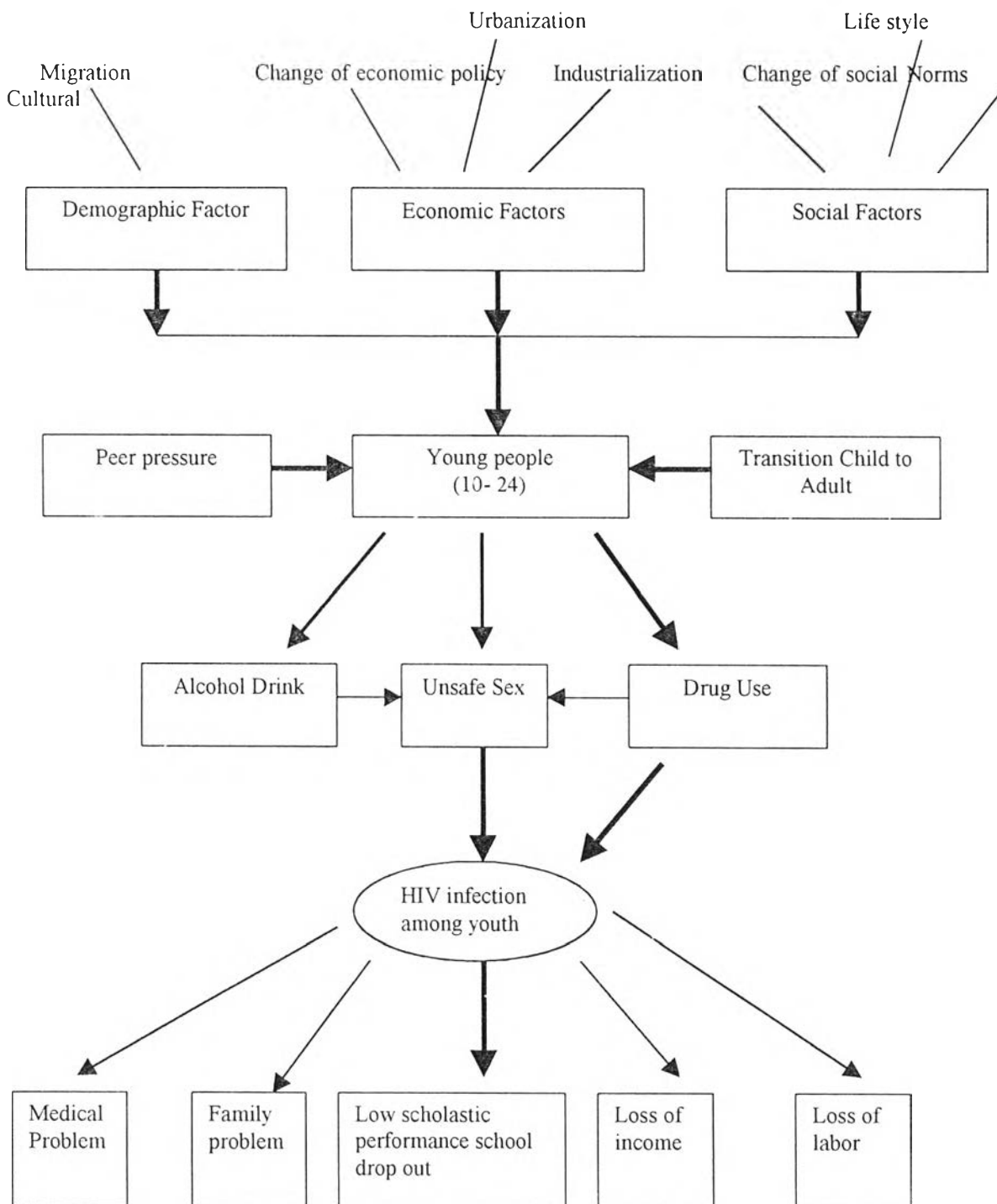
2.5.1 Methods of HIV transmission

There are three main ways HIV can be transmitted by sexual intercourse, blood to blood contamination and the maternal-fetal route. Through sexual intercourse, HIV virus is commonly found in seminal fluid and in vaginal secretion of those who are infected.

Many intravenous drug abusers are infected with HIV by sharing syringes. Minute amounts of blood are often left in the needle or syringe and can lead to person to person transmission.

Most of the young people are ignorant of modes of the HIV transmission. During the young life, they have to sex without condom. They have to use injection drug. There are two main ways HIV can be get among young people in Myanmar.

Figure 2.1 Conceptual Framework Increasing Prevalence of HIV infection among youth in Myanmar



2.5.2 Demographic and Economic factors

2.5.2.1 Transnational Migration and HIV/AIDS

The prevalence of HIV/AIDS became one key health topic in the Southeast Asian Region and in Myanmar. While there have been some successes in HIV/AIDS prevention. The problems remain a major concern, especially in countries, which only recently initiated major programs to address the virus spread. The relationship between transnational migration and spread of HIV/AIDS reveals a complex connection with major implications for efforts to combat the spread of HIV/AIDS. Some types of HIV/AIDS risk behaviors were associated with the migrants, the most commonly cited cases being commercial sex workers. Increasing trade and improved infrastructure will lead to increased transnational migration from rural to urban area.

The lifestyles of young people ages 10 to 24 are very different today than in the previous generation. Young people are more likely to live in cities than ever before. Young people tend to be more concentrated in urban areas than the general population as a whole. They often move to urban areas because they hope to find better opportunities for jobs and education. Some cities in Myanmar are experiencing very rapid growth due to the influx of young migrants (particularly young men) from the countryside. Today, young people also have some advantages over past generations, for example, literacy levels have risen. In more urbanized societies, however, young people are often considered by adults to be immature, irresponsible and unable to make the right choices in their lives. They experience a long period when they are no longer considered to be children but are not yet adults.

After 1988, Myanmar has changed to an open market economy, in order to attract foreign business and investment of industry, hotels, tourism and trade in the country. In the urban area, a lot of housing and industry constructions have increased. At the same time, restaurants, bars, clubs have also increased. Most of the young people engage in drinking, dancing and frequently visit to these entertainment places. As the result, they have easy access to sex and drug use. Some of homeless and runaway youth engage in survival sex (e.g., bartering sex for drugs, money), which further increase their risk for HIV infection. Survival sex is associated with frequent unprotected with numerous and anonymous partners, playing youths at higher risk for HIV infection. In the industrialized world as elsewhere, young people are the most likely among sexually active persons to contract STD's, making their susceptibility to HIV infection an increasing concern (Hein, 1989; Leslie-Harwit & Meheus, 1989).

Urbanization often increases social anonymity, separation from kin, housing difficulties, crime, and unemployment. Cities are experiencing very rapid population growth due to migration from the rural areas. This is one of the serious problems for young people, including drug and alcohol abuse, prostitution, violence, and poor physical and emotional health.

Young people often find their own definitions of adult's status, such as sexual activity, experimentation with alcohol or drugs. Young people learn about sex and become sexually active at a far younger age than adults in the society are willing to admit to. Young people in urban are likely to be exposed to groups with very different values from those of their parents. On the other hand, most of the rural people move to urban area, they look for better jobs. They want to get more money because economic problems. Therefore, urban area is crowded and other health problem happened. Especially, young people often experiment with behavior that increases the probability

of HIV infection: unprotected sexual intercourse, the use of alcohol and other drugs and the sharing of needles to inject drugs. HIV infection is spread by three kinds of way in young people. They are sexual intercourse, drug use (injection) and Blood donor but HIV infection most transmitted IDUs and sexual behavior in young people in Myanmar. The highest rates for STDs and IDUs are usually found in the 20 to 24 year old age groups, followed by the 15 to 19 year old age group.

2.5.2.2 Change of behaviors

During the transitional period between the dependence of childhood and the independence of adulthood is characterized by continual change. This time adolescents form deep attachments with other own age and feel painful emotional experiences very keenly.

The changing circumstances of young people are exposing them to greater risk of HIV infection than in the past. Adolescence is a period of profound physical, mental and emotional change. Young people often experiment with behavior that increases the probability of HIV infection: unprotected sexual intercourse, the use of alcohol and other drugs that impair judgment and the sharing of needles to inject drugs.

2.5.2.3 Alcohol use and risk for HIV infection

Nowadays, the populations at greatest risk appear to be urban areas undergoing rapid sociocultural and economic changes where cultural controls on overindulgence are breaking down and alcohol is becoming increasingly available. Social and Environmental factors are known to be important in the development of drinking among

the young people. Alcohol use may increase the likelihood of HIV infection by decreasing the likelihood of condom use intercourse. Unprotected sexual intercourse (i.e., intercourse without condom) contributes to infection with the human immunodeficiency virus (HIV) that causes acquired immunodeficiency syndrome (AIDS), other sexually transmitted diseases (STDs). Alcohol use may contribute to people engaging in sexual risk-taking behavior. Many adolescents indicate that they are more likely to have sex if they have been drinking. Further, many adolescents report that they are less likely to use condoms when having sex after drinking than when sober. Since the majority of sexually active adolescents do not ever consistently use condoms, a decrease in use when drinking places them at even higher risk for HIV infection and STDs (Strunin and Hingson, 1992).

In fact, alcohol has been shown to have a disinhibitory effect (Ostrow, 1987; Stall et al. 1986) to serve as a person's excuse for engaging in socially unacceptable behaviors, such as rowdy behavior and drunk driving (Cooper et al., 1990; Crowe and George, 1989) and to co-occur with numerous "problem Behaviors" that pose a risk to health, such as smoking, psychoactive drug use, violence, and risky driving behavior (Jessor and Jessor, 1977).

2.5.2.4 Substance Abuse and risk for HIV infection

According to sentinel surveillance, HIV infection prevalence rate is increasing among young people in urban area. Intravenous (IV) drug use provides a direct route of HIV infection for young people. The primary risk of HIV infection from adolescent's use of alcohol and drugs results from the disinheriting effects these substances have on sexual restraint. The use of drugs and alcohol is correlated with increases in sexual activity (Brown, et al., 1992; Goldsmith, 1988; Mott & Haurin, 1988; Zabin et al., 1986)

and a greater likelihood of engaging in high-risk sexual behavior, such as unprotected intercourse (Fullilove, et al., 1990; Killer, et al., 1991).

Homeless youths are also at risk for HIV infection consequence of drug and alcohol use. Robertson (1989) reports are over 61% of homeless youth in Hollywood, California, use drugs and alcohol, with more than one-third meeting diagnostic criteria for substance abuse. The correlation between drug and alcohol use and unprotected intercourse, and the higher rate of HIV infection among populations of street youth (Cohen, et al., 1989), the elevated rates of substance use among these youths is a clear indication that HIV prevention must address the impact of drug and alcohol use on sexual activity in adolescents.

2.5.3 Change of Life style

The importance of the adolescent life period is becoming increasingly evident in all culture in Myanmar. Young people are being targeted increasingly by the music, fashion and leisure industries, which may be called youth "industry". They want to establish an independent life-style. High-risk behaviors and life style are characteristic of adolescence but can present major health care problems (Dryfoos, 1990; Plant and Plant, 1992). The exploration of genital sexuality quite apart from all the wider social and peer pressures. Strong pressures for autonomy identity formation and acceptance by peers, may increase vulnerability to smoking, drinking, sex and drug use in young people.

Adolescents are increasingly concerned about STDs, in particular because HIV infection is becoming a reality among relatives, friends and cult figures. Although, most teenagers are likely to know that the disease is transmitted by sexual intercourse and

reused needles there may be continuing misconceptions and ignorance. Therefore, the prevalence of unprotected sex is high (West, et al., 1993).

2.5.4 Lack of HIV/AIDS knowledge

Most of the young people do not know transmission of HIV infection. How do we prevent ourselves? Young people are more active in their daily lives. They want to maintain their independence. One might argue that, despite high levels of knowledge, many young people's misbeliefs about how HIV is spread continue to impede behavior change. Young people frequently believe that the virus can be spread by giving (rather than receiving) blood transfusions, by being bitten by mosquitoes, or by using public toilets (E.g. CDC, 1990).

Most survey of young people reveals large 'gaps' between their knowledge of HIV and their adoption of safer behavior. Such gaps can be taken as evidence that education has limited ability to halt the epidemic (e.g. Becker & Joseph, 1988; Kegeles et al., 1989; Montgomery, et al., 1989). Young people's basic knowledge about HIV infection is not adequate to change most young people's behavior; there is still an important role for education. Behavior change not only requires knowledge but also consensus of opinion about the meaning of this knowledge and its implication for behavior. Therefore, knowledge-behavior gaps are that they over-represent the number of young people who are actually at risk. It is one thing to be sexually active and another to be at risk of exposure to HIV. Young people have had enough basic knowledge about HIV infection to enable to begin to take preventive action. Furthermore, high proportion of young people has acquired this knowledge. Nevertheless, social barriers may have stood in the way of adopting safer behavior even

if basic knowledge about the health threat has been acquired. If fears of HIV-positive peers are widespread among young people in the audience, then educational strategies that focus on dissipating these fears are needed. A recent mass media campaign in Manila successfully reached a wide audience and reduced misconceptions about HIV transmission in adults (AIDSCOM, 1990).

If young people are to avoid exposure to HIV, they will need behavioral options that are realistic for their stage of life. Knowledge-behavior gaps can exist simply because the behaviors health educators advocate are not realistic options for the audience. Young people will continue to try to satisfy sexual desires even if they recognize the health-threatening consequences those desires entail.

2.5.5 Personal and Environmental Factors

Many of the personal or environmental factors are particularly salient during the transition from adolescence to young adulthood. Indeed, this period is thought to be a particularly critical one for the movement to responsible young adulthood, but there are few studies of change in any risk behaviors between the two periods (Sherrod, et al., 1993).

A review of the current state of knowledge about theories and predictors of risk behavior in youths prompted our interest in exploring frameworks that include both person and environment in determining change in HIV-related risk behavior during the adolescent-young adulthood transitional period.

We are able to find two models/theories that use the notions of both person and environment in relationship to health risk behaviors: Social Cognitive Theory and an ecological model (McLeroy, et al., 1988; McLeroy, et al., 1992). Social Cognitive

Theory posits that behavior, personal determinants (cognitive, affective, and biological), and environmental influences all function as interacting determinants of each other (Bandura, 1992).

We are finding the general idea of person and environment as explanation of HIV risk behavior. We reviewed the literature to see which personal or environment determinants other researchers have conceptualized as important in predicting risk behavior, risk behavior change, and in testing available theories.

The youths personal determinants comprise those variables usually included in health behavior models: self-esteem, mental health problems, perceived vulnerability, and knowledge. The youth environmental determinants as relating to three areas: the family (e.g., support and maltreatment), the society (e.g., social activities and the problem behavior of friends), and the community (e.g., rates of HIV infection and rate of unemployment).

Youths, changing of risk behaviors by manipulating the individual youth and his or her environment. Given the evidence that knowledge alone is not sufficient to prevent young people from engaging in risk behaviors (Stiffman, et al., 1992; Stanton, et al., 1990). prevention programs should focus on those variables that do predict change risk behaviors. These are personal in mental health, and environmental problems in parent-child relations, peer behaviors, stressful events, and neighborhood violence and unemployment. Few of these variables are posited as important in HIV prevention intervention program.

2.5.5.1 The Role of Personal Factors in Health Behavior Change

Knowledge

Knowledge is a necessary precondition for the behavior change. Before behavior change is likely to occur, people must have knowledge both about their risk factors and the ways in which their risk factor can be reduced. The transfer of knowledge is an inherent strength of the communication process. Health communication campaigns can be highly effective at generating appropriate levels of knowledge among members of the target audience (Maccoby & Alexander, 1980).

Skills

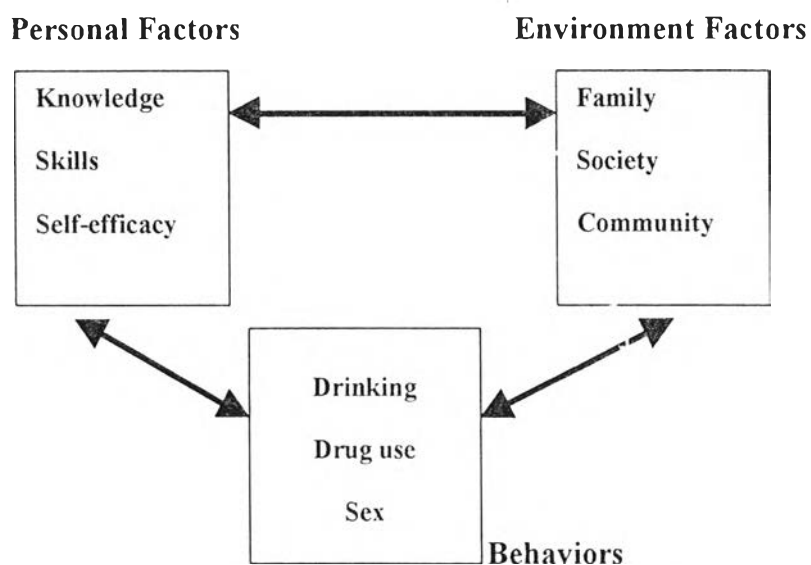
Adoption of a new health-promotion behavior often requires the enactment of a constellation of complex cognitive, social, behavioral, and self-regulatory skills (Bandura, 1986,1991). Examples of these respective skills as they relate to the promotion of safer sex include the ability to recognize situations that may lead to sexual coercion (a cognitive skill), the ability to negotiate safe behavior with a sexual partner (a social skill), the ability to use a condom properly (a behavioral skill), and the ability to adhere to a previously made decision to engage only in safe sex (a self-regulatory skill). Without the necessary skills to support a new health behavior, young people are unlikely to initiate and less likely to sustain behavior change efforts.

Self-Efficacy

Self-efficacy is a pivotal factors in the Social Cognitive Theory in that it mediates the application of knowledge and skills in the pursuit of behavioral attainments self-efficacy refers to people's belief in their capability to organize and

execute the course of action required to perform a given behavior successfully (Bandura, 1986).

**Figure 2.2: The Reciprocal Determination of Behavior, Person and Environment
(A Staged Social Cognitive Approach)**



2.5.6 Demographic Impact

AIDS is a disease that mainly affects young adults. We can not prevent HIV infection spread of the young people; we have social and economic problems in Myanmar. In Africa and Caribbean where there is a considerable heterosexual spread of the disease, children are affected as well. Because these young adults also belong to the group that is often well-educated and socially and economically active, AIDS will have a considerable effects on the composition and organization of society, the economy, social and cultural stability in these regions. AIDS related morbidity and mortality could

be devastating for already over loaded health care systems, whether directly or by increasing the morbidity due to other infections, such as, tuberculosis. Preliminary evidence suggests that AIDS is capable of significantly reducing population growth-rates in developing countries; but it could only depress them to negative values after 30-40 years. The influence on the dependency ratio that is, on the number of children below the age of fifteen years and elderly people of over sixty-fours, divided by the number of adults between fifteen and sixty-four years will probably be very limited. Through mortality of the sexually active adult age-classes would tend to increase the ratio, the general depression of population growth rates because of adult deaths, and the reduction in effective birth rates because of the deaths of infected babies, tend to decrease the ration, even in countries were the prevalence is high (Anderson, et al., 1988).

2.5.7 Economic Impact

The economic burden of the epidemic of AIDS and HIV infection includes both direct costs of prevention -educational campaigns biomedical research, blood- screening and personal medical care costs- that is, diagnosis and treatment of the disease and the indirect costs associated with loss of years of potential life and future economic output. In the United States the lifetime cost of medical care per patient is estimated to be \$80000 maximum, the indirect costs, however, are estimated to be six to eight time that amount. The personal medical care costs of AIDS were estimated to amount to \$ 630 million in 1985. The non-personal costs for research, screening, education and general support services were estimated at \$319 million in 1985 (Scitovsky and Rice, 1987).

2. 6 What are the priority problems

Myanmar is facing the HIV/AIDS crisis. According to epidemiology study, HIV infection rate has increased among young people. The AIDS problem, as well as other sex-related problems, will be shouldered by the public, and already has had large impact on adolescents. Many young people are paying the price in terms of self-esteem, well being and with their problem. The population pyramid of Myanmar is still broad at base reflecting the young population. The twenty-nine per cent of total population is composed of young people who are potential to higher risks of unsafe sex and sexually transmitted diseases, including HIV/AIDS. Therefore, HIV/AIDS prevention education should be targeted the young people who are the future of the country.

Regarding the marital status, a mean of age at marriage for women is 24.5 years and for men is 26.3 years. Mean age at marriage in urban area is about two and half years higher than in rural areas. Young women constitute 41.03 per cent of the age group, 10 to 75 years and above, total of whom 33.82 per cent are never married and 6.77 percent are currently married. Similarly, young men constitute 43.29 per cent of the same age group, total of whom 38.84 per cent are never married and 4.29 percent are currently married (PCFS by Immigration and Man Power Department, 1991).

Myanmar has heavy rural population with 80 percent of total population while urban is composed of 20 per cent only. Approximately twenty-nine per cent of total population are young people between ages 10 to 24 years old. This age group includes school and out of school youth.

Worldwide, HIV poses a life-long threat to children, last years alone over 500,000 children were born with HIV because their mothers were infected and did not have access to prevention methods. Every minute, five young people between the ages

of 10 and 24 become infected with HIV. However, there is good evidence that HIV education and prevention efforts work very well with teenagers and young people (Piot, 1998).

According to sentinel survey done in Myanmar, HIV infection prevalence is increasing among young people. Between 15 to 24 age group is most important in young people, because they will be drop out school or attend the university. Therefore, we select that HIV/AIDS prevention education program for the youths in Myanmar. Nowadays, AIDS is no treatment for medicine. Therefore, prevention is better than cure in my country.

2. 7 What could we do to improve the problem situation?

In Myanmar, National AIDS Prevention project comprises health education activities targeted for the general community as well as the specific education activities targeted towards high-risk individuals and HIV positives/AIDS cases to be implemented in all the townships in the country. In townships where HIV epidemic is seen to be high, special health education activities are to be carried out intensely so that the population is specifically made aware of dangers of this dreadful disease.

Preventing STDs, including HIV infection, is a complex process requiring innovative strategies to effect change in knowledge, attitudes, cognitive decision-making skills, and to prevent or reduce risky sexual behaviors associated with disease transmission (Bandura, 1992; Boyer & Kegeles, 1991).

Adolescents not only have information about the risk and prevention of STDs, they also must have the skills to resist peer pressure, negotiate the use of condoms and

the future consequences of their behavior (Boyer, 1990; Dryfoos, 1990), suggesting that some of these youths may be at risk for STDs/HIV infection.

Peer education programs are to be established for injection drugs users (IDUs), youths and sex worker with the aim to change their behaviors. Special health education activities to reach out to the out-of-school youths are to be carried out in collaboration with NGOs and certain community based organizations that are existing in the community.

The public schools have the capacity and responsibility to help assure that young people understand the nature of the AIDS epidemic and the specific actions, they can take to prevent HIV infection, especially during their adolescence and young adulthood. The specific scope and content of AIDS education in schools should be locally determined and should be consistent with parental and community values. Education about AIDS may be the most appropriate and effective when carried out within a more comprehensive school health education program that establishes a foundation for understanding the relationships between personal behavior and health (M, 1982 & D, L eds, 1987). For example, education about AIDS may be more effective when students at appropriate ages more knowledgeable about sexually transmitted diseases, drug abuse, community health. It may also have greater impact when they have opportunities to develop such qualities as decision-making and communication skills, resistance to persuasion, and a sense of self-efficacy and self-esteem. However, education about AIDS should be provide as rapidly as possible, even if it is taught initially as a separate subject.

However, school-based HIVAIDS prevention education program has not yet been implemented in Myanmar. Students are very important for the future our lives. Especially, high-school students, they are more vulnerable to HIV infection due to

easily to get HIV infection by peer pressure and socio-economics factors. The transition from middle school to high school (early and middle adolescence) is marked by the initiation of many risk behaviors, including the onset of sexual activity (Boyer, 1990; Dryfoos 1990). Therefore, effectiveness school-based HIV/AIDS prevention education program is essential for my country.

2. 8 How would we make improvements?

Strategies to Prevent HIV infection

According to the current reported data on HIV-infected persons and persons with AIDS in Myanmar, heterosexual transmission amongst persons with multiple sexual partners is the predominant source of HIV infection. The main determinants of this transmission have been identified by the a National Consensus Workshop as:

- Unprotected multiple partner sexual intercourse; and
- The prevalence of Sexually Transmitted Diseases.

It was recognized by the consensus Workshop that the rate of HIV prevalence among injection drug users is already at an extremely high level in Myanmar, especially in border areas and major cities. The lack of knowledge or awareness of unsafe injection practices, limited drug treatment and rehabilitation service facilities, were all organized as factors facilitating the rapid spread of HIV amongst injection drug users.

Given the current rate of increase in the prevalence of HIV infection in Myanmar, it is anticipated that the number of persons with AIDS will rise sharply within the next 5-10 years. The majority of AIDS cases, and ultimately deaths, will occur among young adults. The epidemic will, consequently, result in the

overburdening of existing health infrastructures as well as economic and social burdens on the family, the community and on society as a whole due to the loss of income and labor supplies and the need to provide physical and psychological support and care for sick family members.

Young people include a wide range of age groups from 10 to 24 and include youth in school youths and out of school youths. Out of school youths are especially difficult situations (such as Street youth, young sex workers and young girls forced into having sex).

With the pandemic of AIDS threatening young people all over the world and the problem of drug abuse and delinquency, identifying the high risk behavior among the adolescent population, especially among high school students will be a necessary prerequisite for designing intervention programs to prevent common health problems faced by the youth of today. An important strategy of preventing the spread of AIDS among adolescents is reducing risky behaviors (i.e. unprotected sexual practices, substance abuse). AIDS education has been a widely used approach to increase awareness and knowledge about AIDS and its causes.

However, research evidence now available shows that risk-reduction efforts that are based on education alone are unsuccessful in producing behavior changes for AIDS prevention (Goldman Harlow, 1993). A different focus in AIDS-prevention research has been developed to investigate cognitive processes that more directly affect actual behavior change (Fisher Misovich, 1990; Poppen& Reisen, 1994). One approach that is gaining growing attention in this regard is based on Bandura's (1990) theory of self-efficacy.

With self-efficacy theory, investigators examine the cognitive processes that motivate behavior and behavior changes. Bandura (1980) posited that "the relationship

between knowledge and action is significantly mediated by self-referent thought” (p.263). On the basis of this theory, it is conceivable that a person could have information about AIDS transmission but still engage in unprotected sexual activity. Behavior is not direct result of knowledge or skills; rather, a process of cognitive appraisal mediates it by which people form a judgment of their ability to execute certain actions. Bandura (1990) discussed the application of self-efficacy to AIDS prevention and contended that perceived self-efficacy can exert control over behavior that carries risk of HIV infection.

2. 9 Which intervention should we make?

Prevention for HIV/AIDS among adolescents is increasingly recognized as an important health priority. Despite mass media campaigns providing health information on HIV/AIDS, adolescents have not changed their behavior in response to the pandemic (Rotheram-Borus, et al., 1995). Intensive prevention programs focusing on helping youths perceive HIV as a problem, motivate them to act safely and implement safe acts by acquiring necessary skills which are essential to reduce high-risk behaviors among adolescents.

Teenagers in Myanmar are continuing to put themselves at risk for HIV infection due to such behaviors as substance abuse, mainly in the form of intravenous drug injections and sharing of needles, shared piercing and tattooing. With the increasing rates of HIV infection among adolescents, there is an urgent need for interventions that will provide teenagers with information, the ability to make decision, the assertiveness and communication skills required for effective prevention and risk reduction (Kiphe, et al., 1993). However programs aimed at adolescence are steeped in

controversies of which programs to implement for different age groups, policy clashes about whether abstinence or condom use should be promoted and the concern that risk-reduction programs will increase, rather than decrease, sexual risks. The preponderance of data demonstrates that sex education does not increase but may decrease sexual activity (Choi & Coates, 1994). Many interventions have been mentioned as appropriate for HIV/AIDS prevention: small group's discussion, street outreach, and peer education, large group discussions, counseling and provision for educational materials.

It has also been noted that the use of multiple methods increased the intensity of the interventions and contributed to their effectiveness. However, it has been found that peer approval is a critical influence on health, increasing the social acceptability of behaviors (Freudenberg, 1995).

A majority of intervention in Myanmar has concentrated on the process of information giving i.e. providing facts about HIV and focusing primarily on the routes of transmission (Rivers, et al., 1993) has shown that providing health education alone is inadequate as (1) people do not passively receive information about health and utilize it to make rational changes in behavior; (2) Knowledge on HIV/AIDS does not result in adoption of low risk or healthy behavior. People bring their own meanings and cultural backgrounds to information that is presented to them. Thus health education programs need to include participatory approaches. Participatory methods gives individuals the opportunity to identify their own concerns rather than having an agenda imposed upon them

2.9.1 Peer Education

Peer education, generally, is the sharing of information, attitudes or behaviors by people who are not professionally trained educators but whose goals is to educate (Finn 1981). In school setting, peer education is conceived to engage students as teacher to their peers, getting students to participate by educating each other (Margulies & Ito, 1990). New way of teaching, thinking, interrelating and reacting is needed. The peer education concept was conceived as a mean towards the end: to empower youth to have an impact on fellow students through positive peer pressure (Margulies & Ito, 1990). Peer education can produce behavioral change effectively because youngsters who engage in peer education with trained students leaders can come to express and investigate their attitudes and feelings with freedom, honesty and intensity (Finn, 1981). Moreover, youngsters who are trained in peer education will be available to provide accurate and relevant health information whenever a friend or a member of family develops a need for such information.

Peer education also has long-term advantages that health educator should promote it as teaching and learning strategy throughout students lives. Peer education program have been effective in providing adolescents with correct information about HIV risk reductions and how to build life skills associated with prevention that enhance self-esteem and provide ongoing social support on formal and informal occasions in a culturally sensitive manner (McLean, 1994). Behavioral change has also been shown in AIDS peer education program (APEP) for first year college students at Florida Atlantic University (Richie, et al., 1993).

The peer education program will be based on self-efficacy from Social learning theory, the Theory of Reasoned Action and AIDS Risk Reduction Model (ARRM). A

strong self-belief in one's efficacy to exercise personal control is necessary. Translating health knowledge into effective self protection against AIDS infection requires social and self regulative skills and a sense of personal power to exercise control over sexual and drug activities which are the major modes of transmission for the AIDS viruses (Diclemente, et al., 1994).

The peer education program will equip the adolescents with skills and self-beliefs that will enable them to carry out health behaviors pertaining to their drug use and safer sexual practices in the face of counter acting influences. Another aspect of social cognitive theory that will be utilized is for providing social supports for personal behavior change. Normative influences regulate behavior through two regulatory systems- Social sanctions and self-sanctions. Social norms will help convey standards of conduct, involvement in a social net work supportive of self-protective practices the peers serving as role models.

Peer education will also utilize the risk reduction model as it will take the participants through the stages of (1) labeling or recognition of one's sexual behaviors or drug use as high risk for contracting AIDS; (2) Making a commitment to reduce high risk behaviors and; (3) seeking and enacting strategies to obtain the risk reduction goals (Catania, et al., 1990). The peer education program will provide information, enhance self-efficacy, improve social factors, including verbal communication skills, and promote help seeking processes and social support. The theory of Reasoned Action (Ajzen, et al., 1980) asserts that to increase motivation to perform AIDS preventive behaviors, one should influence attitudes towards the performance of AIDS preventive acts or perception of social normative support for such behaviors or both. Peer education programs, which is an interactive communication process will influence the individual's "affective, cognitive or behavioral state concerning a particular situation

including the perception of social norms" and thus promote adoption of healthy behaviors.

2.9.2 Effectiveness of School -based HIV/AIDS Education

It is a part of the curricula in virtually all countries; school health education provides an important opportunity to reach a significant percentage of young people throughout the world. In areas where the subject has fallen into neglect, the advent of HIV may provide an opportunity to revitalize the teaching of health education. Additionally, school health education can be improved by including "life skills" in the curricula and by training teachers to use it. Comprehensive health education program helps students acquire personal and social skills as well as HIV/AIDS related knowledge, attitude and values. Therefore, it can influence healthy lifestyle and health risk behaviors.

A study in Bombay, India showed evaluation of a school-based HIV/AIDS educational program. The pre-test was administered to 2,919 students regarding modes of transmission and prevention of HIV/AIDS. An education program was instituted for one half-school day at ten secondary schools. Before the educational intervention, only 50% of the students knew that HIV/AIDS is transmitted sexually, only 34% knew that there are no medicines that cure HIV/AIDS and 24% thought that HIV is transmitted by mosquito bites. After the intervention, 95% of the students knew that HIV/AIDS is transmitted sexually, 92% knew that there is no HIV/AIDS cure and 76% knew that mosquito does not transmit HIV/AIDS. There was a substantial increase in correct knowledge about HIV/AIDS among students after the educational intervention program.

A study in Thailand recommended that regular school-based programs of education to increase awareness of preventive strategies of HIV/AIDS and sexually transmitted diseases. A survey of knowledge, attitude and practice (KAP) regarding human immunodeficiency virus was performed on 899 students from three public's high schools located in the Bangkok Metropolitan area. Firstly, all students completed a written questionnaire (pre-test) regarding HIV/AIDS. Following this, they attended a slide lecture presentation given by a specialist physician. The same test questionnaire was then completed by the same student's six week (post-test) later for the comparison of the previous KAP. Knowledge about HIV/AIDS and risk factors in the post-test questionnaire was significantly increase ($p < 0.001$) from the pre-test status. However, their attitudes to an HIV infected person were not significantly changed in the post-test questionnaire: only the attending school question showed significantly ($P < 0.05$) increased number of agreement. Similarly, the attitudes and practices to prevent HIV infection were not significantly ($P > 0.05$) different between pre-test and post-test questionnaires.

Another study found that AIDS education program was developed and evaluated in a high school in a socio-economically disadvantaged, urban, African area in South Africa. This program which addressed the whole school community, aimed to raise awareness about AIDS using a variety of educational methods and operating through a number of channels. Students and teachers were actively involved in its design and implementation. Students' knowledge of and attitudes towards AIDS prevention were investigated before and after the AIDS program. And then, compared to a neighboring School, in which no AIDS education was conducted. The program greatly improved students' knowledge of HIV transmission and prevention. It increased levels of acceptance of people with AIDS and had a small impact on behavioral intentions.

2.9.3 Conclusion

The HIV/AIDS epidemic is a challenge to human survival, human rights and human development and the impact of their epidemic is best understood in the context of the social and economic problem in the developing countries. Why is it that HIV infection in young people are increasing worldwide? The contribution factors which affect young people's vulnerability to HIV infection and AIDS include biological, social and economic factors. These factors make it difficult for young people.

Sentinel surveillance in Myanmar showed an increase in HIV infection among young people. As we adjust to becoming a society in which AIDS is part of everyday life, it becomes increasingly, important to develop sound measures to monitor the effectiveness of our prevention efforts.

HIV virus is transmitted almost exclusively by behavior that individuals can modify, educational programs to influence relevant behavior can be effective in preventing the spread of HIV.

HIV/AIDS prevention programs should be implemented in a variety of places where adolescents can be reached, school-based programs represent a practical and cost-effective approach. However, many school-based AIDS education programs have utilized only didactic instruction and have focused on knowledge and attitudes about HIV and AIDS (Brown, Fritz, & Barone, 1989; DiClemente, et al., 1989; Petosa & Wessinger, 1999; Schinke, Gordon & Weston, 1990; Ruder, Flam, Flatto & Curran, 1990).

Alternatively, peer counselor/educators (PCEs) may be a more effective strategy. These trained peer counselor/educators (PCEs) take the leading role in school wide activities and classroom sessions covering STD/HIV information, community health resources, communication and negotiation skills and safer sex strategies.

Teachers and students rated the PCEs effective in promoting discussion and serving as sources of information about AIDS and community health resources. Pretest-Posttest intervention questionnaire results demonstrated an increase in AIDS awareness and discussion among students as well as an increase in condom use. Based on this social influence approach, peer education appears to be a promising health education strategy for student in dropout prevention programs (J Sch Health, 1996; 66(5): 176-182).

School-based intervention to reduce sexual and intravenous drug-related AIDS-risk behavior have shown little success in postponing onset or reducing prevalence of HIV risk among populations engaged in high-risk behavior (Kirby, et al., 1994; Fisher, et al., 1992).

In Myanmar, 29% of the general population are young people. Adolescence and young adulthood mark the on-set of sexual activity and experimentation with substance use. This age group is important to target for health education to prevent and control spread of HIV/AIDS. Adolescents and young adults are at a high risk of getting sexually transmitted diseases (STD), including HIV due to their life styles and careless sexual practices. Therefore, HIV/AIDS prevention program for adolescents is essential and should be promoted.

References

- Anderson, R. M., & May, R. M. (1988). Epidemiological parameters of HIV transmission *Nature*. 333,514-9.
- Bandura, A. (1992). A social cognitive approach to the exercise of control over AIDS infection. In R. DiClemente (Ed.), Adolescents and AIDS: a generation in Jeopardy (pp.). Newbury park, CA: Sage.
- Bandura, A. (1991). Self-efficacy mechanism in physiological activation and health-promoting behavior. In J. Madden (Ed.), Neurobiology of learning, emotion and affect (pp. 229-269). New York: Raven.
- Bandura, A. (1986). Social foundation of thought and action: A social cognitive approach. Englewood Cliffs, NJ: Prentice Hall.
- Becker, M. H. & Joseph, J.G. (1988). AIDS and Behavioral change to reduce risk: a review. American Journal of Public Health, 78, 384-410.
- Brown, L. K. DiClemente, R. J., & Beausaleil, N. I. (1992). Comparison of human immunodeficiency virus: Related knowledge, attitudes, intentions and behaviors among sexually active and abstinent young adolescents. Journal of adolescent health, 13, 140-145.
- Cohen, J., Lyons, C. A., Lockett, G. J., Mcconnell, P. A., Sanchez, L. R., & Wofsy, C.B. (1989). Emerging patterns of drug use, sexual behavior: HIV infection and STD in high-risk San Francisco areas from 1986-1989. Paper presented at the Fiftieth international Conference on AIDS, Monteral, Quebec.
- Cooper, M. L., Skinner, J. B., & George, W. H. (1990). Alcohol use and sexual risk taking among adolescents: Methodological approaches for assessing casual

- issues. In D. Seminara, A. Pawlowski, & R. Waston (Eds.), Alcohol, Immunomodulation, and AIDS (pp.11-19). New York: Alan R. Liss.
- Crowe, L.C., & Geroge, W. (1989). Alcohol and human sexuality: Review and integration. Psychological Bulletin, 105 (3), 374-386.
- Department of Health. Prevention and Control of HIV/AIDS in Myanmar (1996-1997).
- Diclemen, R. J. (1990). The emergence of adolescents as a risk group for human immunodeficiency virus infection. Journal of Adolescent Research, 5, 7-17.
- Dryfoos, J. (1990). Adolescents at risk. Prevalence and prevention. New York: Oxford University Press.
- Finn, P. (1981). Institutionalizing Peer Education in the Health Education Classroom. The Journal of School Health. 91-95.
- Fisher, J. D., Fisher, W. A. (1992). Changing AIDS-risk behavior. Psychol Bull, 111(3), 455-474.
- Fullilove, R., Fullilove, M., Bowser, B., & Gross. (1990). Risk of sexually transmitted disease among black adolescent crack users in Oakland and San Francisco Calif. Journal of the American Medical Associations, 263, 851-855.
- Goldsmith, M. (1988). Sex tied to drugs-STD spread. Journal of the American medical Association, 260-2009.
- Hansen, W. B., Johnson, C. A., Flay, B.R., Graham, J.W., & Sobel, J. (1988). Affective and social influences approaches to the prevention of multiple substance abuse among seventh grade students: Results from Project SMART. Prev Med, 17, 135-154.
- Hein, K. (1989). AIDS in adolescence. Journal of Adolescent Health Care. 10 (3S), 10-35.

- Jessor, R., Jessor, S. L. (1977). Problem behavior and psychosocial development: A longitudinal study of youth. New York: Academic press.
- Keller, S. E., Bartett, J. A., Schleifer, Johnson. R. L., Pinner, E., & Delaney, B. (1991). HIV relevant sexual behavior among a healthy inner city heterosexual to adolescent population in an endemic area of HIV. Journal of adolescent health care, 12, 44-48.
- Kirby, D., Short, L., Collins, J., Rugg, D., & Kolbe, L.(1994). School-based program to reduce sexual risk behaviors: A review of effectiveness. Public Health Rep., 109 (3), 339-359.
- Leslie-Harwtt, M. & Meheus, A. (1989). Sexually Transmitted disease in young people. The Important of Health Education, Sexually Transmitted Diseases, 16, 15-20.
- Margulies, E. & Ito, K. (1990). PEP Peer Education in Health for Student Empowerment. Hawaii Medical Journal, 49 (2), 57-59.
- McLeroy, K., Steckler, A., Goodman, R., Burdine, J. (1992). Health education research: Theory and practice: Future directions. Health Educ Res: Theory and Practice, 7, 1-8.
- McLeroy, K., Bibeau, D., Steckler, A., & Glanz, K. (1988). An ecological perspective on health promotiom programs. Health Educ Q, 15, 351-377.
- Morris, L., Warren, C. W., & Aral, S. (1993). Measuring adolescent sexual behaviors and related health outcome. Public Health Rep., 108(1), 31-36.
- Mott, F., & Haurin, J. (1988). Linkages between sexual activity and alcohol and drug use among American adolescents. Family planning perspectives, 20, 128-136.

- Ostrow, P. (1987). Barriers to the Recognition of Links Between Drug and Alcohol Abuse and AIDS in Acquired Immunodeficiency Syndrome and Chemical Dependency, DHHS Pub. No (ADM) 87-1513. Washington, DC: Supt of Does, US Govt. Print Office, 15-20.
- Perry, C. L., & Kelder, S. H. (1992). Models for effective prevention. J Adol Health, 13, 355-363.
- Plant, M. A., & Plant, M. (1992). Risk takers: alcohol, drugs, sex and youth. London: Tavistock/Routledge.
- Quinn, T. C. (1995). The Epidemiology of the Acquired Immunodeficiency Syndrome in the 1990's. Emergency medicine clinics of North America, 13 (1), 1-25.
- Robertson, M.(1989). Homeless youth an overview of recent literature. paper presentation at the national conference on homeless children and youth Washington, DC.
- Scitovsky, A. A. & Rice, D. P. (1987). Estimates of direct and indirect costs of acquired immunodeficiency syndrome in the United States, 1985, 1986, and 1991. Public Health Reports, 102-5.
- Sherrod, L., Haggerty, R., Featherman, D. (1993). Introduction: Late adolescence and the transition to adulthood. Journal Res Adolesc, 3(3), 217-226.
- Stanton, B., Black, M., Kean, M., Feigelman, S. (1990). HIV risk behaviors in young people: Can we benefit from 30 years of research experience?. AIDS Pub Policy Journal, 5, 17-23.
- Stau, R. Mckususick, L. Wiley, J., & Andostrow, D. (1986). Alcohol use and drug use during Sexual Activity and compliance with safe sex. Health Education Quarterly, 13, 359-371.

- Stiffman, A., Dore, P., Earls, F., & Cunningham, R. (1992). The influence of mental health problems on AIDS-related risk behaviors in youth adults. Journal Nerv Ment Dis, 180, 314-320.
- Stiffman, A., Earls, F., Dore, P., & Cunningham, R. (1992). Change in AIDS related risk behavior after adolescence: Relationships to knowledge and experience concerning HIV infection. Pediatrics, 89, 950-956.
- Strunin, L., Andhingson, R. (1992). Alcohol, Drugs and Adolescent Sexual Behavior. International Journal of the Addictions 27(2), 129-146.
- Walter, H., & Vaughan, R. D. (1993). AIDS risk reduction among a multiethnic sample of urban high school students. JAMA, 270, 725-730.
- West, P., Weight, D. & Macintyre, S. (1993). Heterosexual behavior of 18 years olds in the Glasgow area. Journal of adolescence, 16, 367-96.
- WHO/UNICEF. (1995). Working with Young people' A guide to preventing HIV/AIDS and STDs.
- World Health Organization. (1989). The Reproductive health of adolescents: a strategy for action. Geneva: World Health Organization.