Chapter II

Literature Review

The literature was reviewed from many documents, text books and research reports. It was summarized into 2 parts:

1. The theoretical background

2. The related studies

The Theoretical Background

Theoretical Views on Attitude Components:

Differing definitions of "attitude" offered by different authors,

"... a condition of readiness for a certain type of activity" (Warren, quoted in Allport,1935).

"Attitude refers to certain regularities (consistencies) of an individual's feelings, thoughts and predispositions to act in response to an aspect of his environment (affective domain)" (Guilbert, 1977).

"An attitude is a tendency to act toward or against something in the environment, which becomes thereby a

positive or negative value" (Bogardus, quoted in Allport, 1935).

"An attitude is a mental or neural state of readiness, organized through experience, exerting a directive or dynamic influence upon the individual's response to all objects and situations with which it is related (Allport, 1935).

There are many different aspects of the concept of "attitude". Since all of these aspects of attitudes are important, a comprehensive definition of the concept of attitude is offered by Fishbein and Ajzen (1975) "a learned predisposition to respond in a consistently favorable or unfavorable manner with respect to a given object".

There are two main theoretical viewpoints about the essential nature of attitudes (Oskamp, 1991).

1. Tri-Componential: the older one, holds that an attitude is a single entity but that it has three components, (see Figure 1).

1.1. A Cognitive Component: consisting of the ideas and beliefs which the attitude-holder has about the attitude object.

1.2. An Affective (Emotional) Component: this refers to the feelings and emotions one has toward the object.

1.3. A Behavioral Component: consisting of one's action tendencies toward the object.

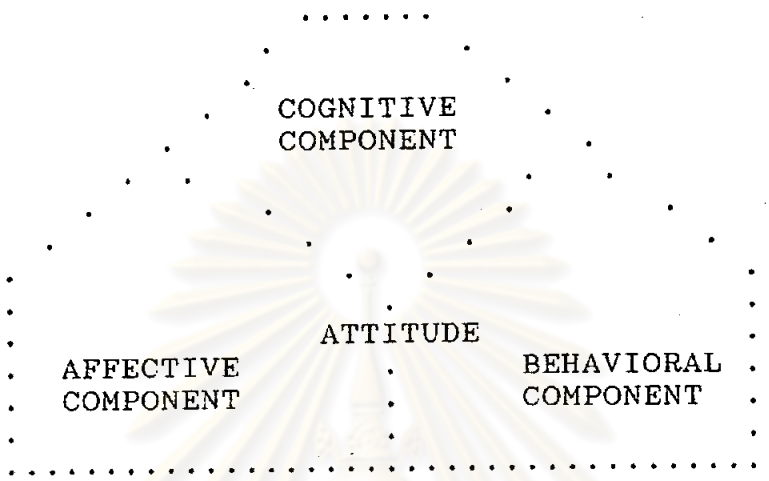


Figure 1: Tri-componential.

Source: Oskamp, S. Attitudes and opinions. 1991.

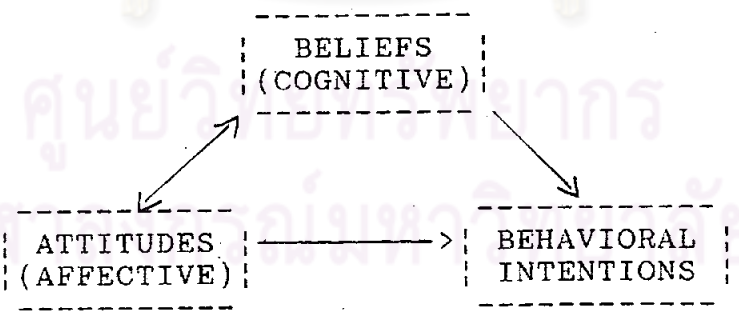


Figure 2: Separate entities viewpoint.

Source: Oskamp, S. Attitudes and opinions. 1991.

This conceptual distinction between thoughts, feelings and actions as separate but interrelated parts of an attitude has a long history in philosophy.

2. Separate Entities Viewpoint: The newer theoretical view (Fishbein and Ajzen, 1975) (see Figure II).

The conflicting findings mentioned above about the varying degrees of relationship among the three attitude "components" in different studies give support to the separate entities viewpoint because it does not require a necessary connection among these concepts but does allow for a strong relationship under certain specified conditions.

Katz (1960) has suggested that understanding or knowledge is the one of the major function which attitudes perform. "Many attitudes help us to understanding our world and to make sense of occurrences around us".

Theoretical View on AIDS Education:

"In health education it is very important to be able to identify the practices that cause, cure or prevent a problem" (World Health Organization [WHO], 1988).

Definition of AIDS Education There can be any number of definitions of an educational discipline or subject-area. Even under ideal circumstances it is difficult to formulate a definition which will be appropriate for all educational and social systems. It is more so difficult with a subject like AIDS which is closely

linked to socially and culturally sensitive subjects. Subject to this limitation, an attempt has been made to formulate a definition for consideration: An activity of an educational nature, seeking to promote, through the provision of information, guidance or counselling, appropriate attitudinal and value changes and behavioral modifications conducive to minimizing the spread of HIV infection and AIDS and the impact on society.

Embodied in this definition are certain useful elements which help to bring out the characteristic features of AIDS education: (The nature and definition of AIDS education, 1991).

1. The emphasis on the educational nature of the activity is to focus attention on the need for a well developed and structured AIDS education programme, in contrast to an information campaign, for instance, which is of a very short duration. Such campaigns are no doubt important, but do not necessarily fulfil the total content of an educational activity. AIDS education is more than the provision of basic information, in that it deals with attitudes, feelings, values, roles and functions and, with behaviours.

2. AIDS education programs provide information, guidance and counselling. Guidance and counselling will be required not only to clarify values and issues concerning what constitutes risk or high risk behaviour, but also about screening for HIV antibodies, living with HIV seropositive persons and AIDS patients, and on strategies to cope with the many behavioral and social problems associated with HIV and AIDS.

3. AIDS education programs aim at promoting appropriate attitudinal and value changes and behavioral modifications, which will be conductive to minimize the spread of HIV infection and its impact on society.

There are three fundamental goals to achieve the AIDS education:

1. To create a better understanding and awareness of the nature of the virus, the modes of transmission, preventive methods, as well as the medical and social implication of HIV/AIDS.

2. To assist the target audience to understand the importance of the preventive methods for themselves and for others.

3. To instill in the target audience a commitment to developing such attitudes, values and behaviour as will help minimize the possibilities of being infected or of infecting others.

Theoretical View on AIDS

AIDS-the acquired immunodeficiency syndrome-is an unprecedented public health problem facing the entire world. No cure is in sight, and no vaccine is likely for several years. The only means of containing the disease is health education-frank, explicit, and repeated (Mann, 1987).

AIDS was first described in the USA in 1981. Retrospective studies indicate that the first cases may have occurred there as early as 1978. The geographical and biological origins of the virus causing the disease are not clear. However, it appears that this is the first time in modern history that it has spread widely in the human population.

What causes AIDS ?

A newly recognized retrovirus has been shown to be the cause of AIDS. It has been given different names, but it is now known by the internationally agreed name of human immunodeficiency virus (HIV). When HIV penetrates a cell in the human body, an enzyme called reverse transcriptase transforms the genetic material of the retrovirus into DNA (deoxyribonucleic acid). This new DNA is integrated into the host cell's own genetic material and, every time the host cell reproduces, the new cells contain viral genes. This results in an infection most virologists believe to be lifelong.

AIDS, the most severe consequence of HIV infection, is characterized by the destruction of key elements in the patient's immune system, resulting in a series of severe and ultimately fatal opportunistic infections and malignancies. The factors influencing the viral activity level are unknown, but it is clear that the infection can move readily from a dormant state to one of intense activity, which results in disease manifestations of varying severity.

Opportunistic infection is an infection caused by a microorganism that rarely causes disease in persons with normal defense mechanisms (Institute of Medicine [U.S.], 1986).

About 80% of the AIDS patients studied in the USA have had one or both of two rare diseases (Mann, 1987):

- **Pneumocystis carinii** pneumonia, a parasitic infection of the lung.

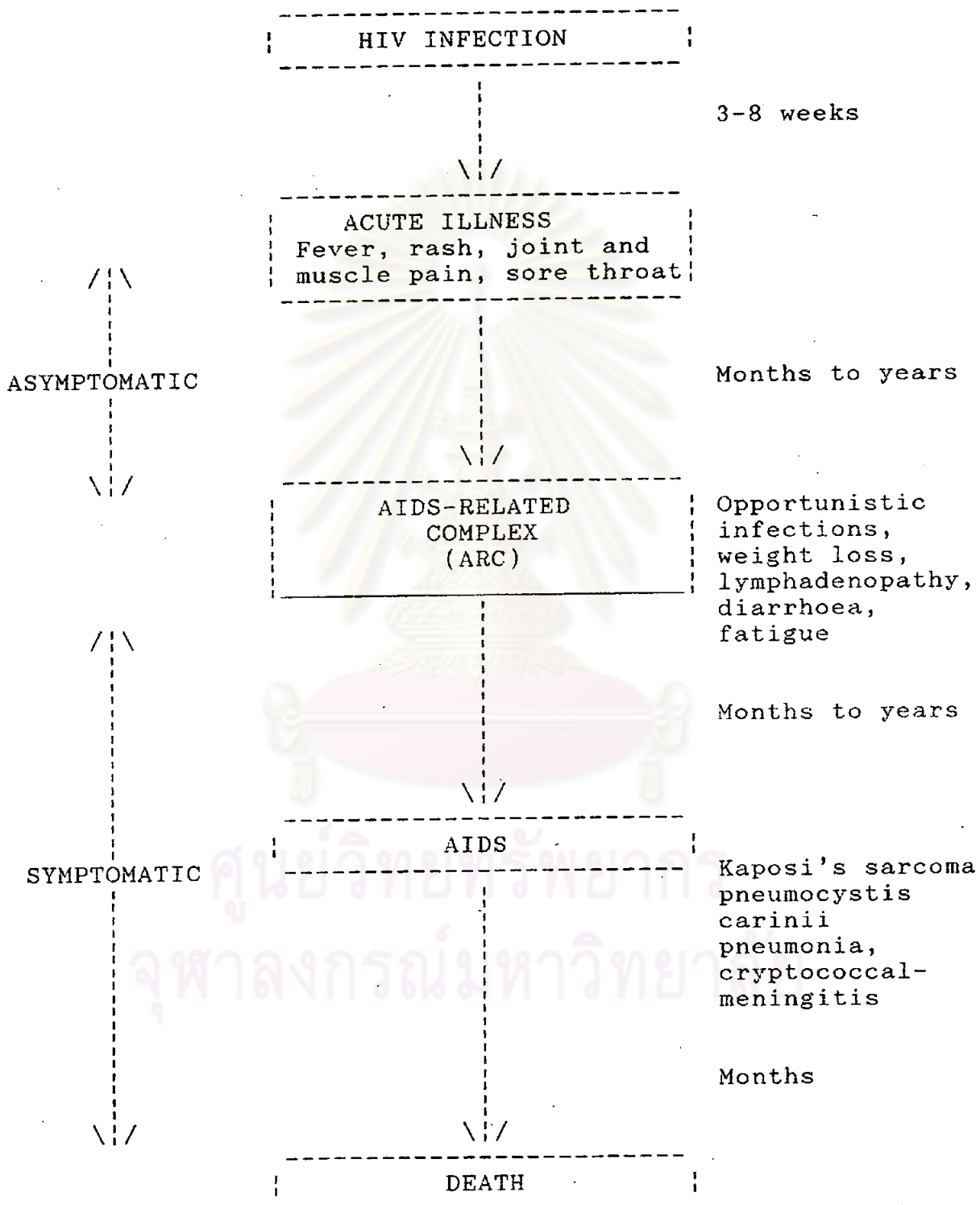
- **Kaposi's sarcoma**, a cancer that usually occurs anywhere on the surface of the skin or in the mouth.

HIV Infection

The progression of HIV-related illness is depicted in Figure 3. Within 3-8 weeks after infection, the person generally develops an acute illness lasting 2-3 weeks with symptoms such as fever, rash, joint and muscle pain, and sore throat. Symptoms may be mild and usually disappear completely. However, the virus continues to reproduce itself inside the body, and the person's immune system responds by developing antibodies to the virus. Within a period of 6-26 weeks after infection, it is usually possible to detect HIV antibodies in the blood. Unlike antibodies to most other microorganisms, these antibodies do not destroy the virus. In some infected persons, antibodies cannot be detected for months or years after infection, yet they are still considered infectious.

Persons may remain asymptomatic and feel and appear healthy for years, even though they are infected with HIV. HIV infected persons who may have symptoms which do not yet

Figure 3: Natural history of human immunodeficiency virus.



meet the definition of AIDS are said to have ARC, or AIDS-related complex. ARC patients often experience periodic episodes of opportunistic infections, which can be life-threatening if not controlled by therapy.

ARC is a disease in which certain parts of the immune system are damaged by HIV, and a person becomes sick with opportunistic disease or symptoms that are not considered definitive of AIDS. Symptoms and illnesses associated with HIV illness can include:

- Swollen glands, especially in the neck, groin and armpits, which persist with no apparent cause

- Persistent fatigue

- Recurrent fevers or night sweats of which the cause is unknown

- Weight loss of ten percent or more of body weight

- Persistent diarrhoea.

They may also exhibit neurological symptoms such as short term memory loss, altered gait, depression, sleep disorders, subacute encephalopathy, aseptic meningitis, encephalitis, and peripheral neuropathy.

These symptoms are rather nonspecific, thus it is only if some of them persist over weeks to months, or if there are additional appropriate features in the physical

findings or history that HIV should be considered as a cause. As the symptoms progress over time, ARC patients becomes AIDS patients unless therapy is available and successful.

Center for Disease Control (CDC)/WHO case definition of AIDS for surveillance purposes

This diagnosis of AIDS is based on clinical signs and the results of the HIV antibody test. A diagnosis of AIDS is made when a person has one of a list of specified diseases (opportunistic infections and selected cancers) which are indicative of an underlying immune deficiency. Other causes of immune deficiency must be ruled out (WHO, 1990).

Incubation Period

The period between infection with HIV and the onset of AIDS symptoms seem to range from 6 months to 5 years or more. This long and often unrecognized period of asymptomatic infection, during an infected person can infect others, complicates control of the spread of virus.

Transmission of the Virus

HIV has been isolated from blood, semen, vaginal secretions, saliva, tears, breast milk, and urine and is likely to be present in other body fluids, secretions, and

excretions.

However, epidemiological evidence has implicated mainly blood, semen, and vaginal secretions in transmission. HIV, the etiological agent of AIDS, is transmitted in the following ways:

- through intimate sexual contact with an infected individual. Sexual contact is the main mode of HIV transmission. Although AIDS seems to have started among homosexuals, it is not restricted to them. Infected men can infect their female partners as well, and infected women can similarly infect men. Transmission occurs through anal, vaginal and oral intercourse although the relative efficiency of each route is not known. Anal intercourse, which frequently results in slight ruptures of the rectum, is thought to be a frequent mode of transmission. Through these ruptures, semen containing virus can enter the blood stream of the sexual partner. The risk of infection with the virus is increased by having multiple sex partners, either homosexual or heterosexual. The person-to-person transmission of HIV is dominated by the role of the apparently healthy yet infected person who is capable of transmitting the virus.

- through exposure to contaminated blood and blood products is the second method of acquiring infection. This occurs as a result of the receipt of infected blood or blood

products, the use of blood-contaminated needles or equipment by drug abusers, or the use of inadequately sterilized needles or other skin-piercing instruments.

- from an infected mother to her child before, during, or shortly after birth

- by means of infected body organs, other issues, or semen from an infected donor.

Studies show no evidence that the infection is transmitted by so-call casual contact that is sneezing, by shaking hands, by sharing a drinking glass, by insect bites, or by living in the same household with an AIDS sufferer or an HIV infected person. HIV is not spread through immunization programs using properly sterilized syringes.

Impact on Society

The personal, social, and economic costs of the HIV epidemic are enormous. As the prevalence increases there will be dramatic economic effects from the morbidity and mortality among people in the productive age group, which is typical of AIDS epidemiology in both industrial and developing countries.

The economic costs of AIDS are enormous. For example, in the USA the total annual cost of direct medical care for AIDS patients in 1991 will reach about 16 billion dollars (Mann, 1987). The effect of the pandemic will be

felt in health care, in insurance and legal systems, on economic and social development, and indeed on entire cultures and populations, and the effects will be profound.

Treatment

Treatment can be aimed at the HIV infection itself or at any of the opportunistic diseases which may be occur. The antiviral medication is Zidovudine or AZT (azidothymidine). AZT inhibits the replication of retroviruses but does not kill the virus. In some people with AIDS and HIV illness, AZT has been shown to reduce morbidity and mortality.

It is likely that the use of AZT may be limited. first, it is very expensive since the amount of medication for one month costs approximately 700 U.S. dollars (WHO, 1990). Second, even though many people have benefited from the drug, there are some who experience side-effects, including bone marrow suppression and administration of the medication must be stopped.

HIV Antibody Test

The most frequently used test is the enzyme-linked immunosorbent assay (ELISA). The ELISA test has been developed to screen donated blood and blood products for the virus, and very effective in protecting patients from receiving contaminated products. However, sometimes there

are false positive and false negative results. In order to eliminate the possibility of any HIV positive blood being administered to a patient, the point at which the test result is read as "positive" is set so that it includes all possible positive results, and some negative results that are read as positive. Within this range, there will fall some test results that are really negative, otherwise known as false positives. Subject to these precautions, the test that is truly positive is likely to show a positive result. However, because of this tendency to err on the side of false positives, a supplementary test such as Western Blot may be used to check the results.

A negative result may be a false negative and actually reflect the period of time after infection prior to antibody production. This is sometimes known as the "window period". Because of this time-lag, the patient should be advised to be retested six weeks after the high-risk activity.

Prevention

The educational techniques used must therefore have a strong focus and a creative approach. To formulate a programme will be an extremely difficult task since sexuality is not a subject that can be discussed openly. But it is imperative that the basic information on the avoidance of HIV infection should reach everyone.

1. People must be told the facts about AIDS and it is transmitted. They should be told specifically of the dangers of certain sexual practices, prostitution, and promiscuity and of the need to refrain from anal intercourse and oral contact with the sexual organs. They should be told that for their own sake and the sake of others they should always use a condom in casual sexual encounters. Above all they should be urged that the surest way of avoiding AIDS is to keep to one sexual partner.

2. Intravenous drug users should be made aware of the danger of sharing needles and syringes. People at risk of HIV infection should be discouraged from donating blood, plasma, body organs, other tissues, or semen. Instrument that break the skin as used in circumcision, ear-piercing, tattooing, or scarification must be thoroughly disinfected before reuse. This can be done with hypochlorite solutions (diluted household bleach), formaldehyde, gluteraldehyde, or alcohol or boiling. Toothbrushes, razors, and other implements that could be contaminated with blood should not be shared.

3. HIV infected women should be advised that pregnancy will increase the likelihood of their developing AIDS and that they could transmit the infection to their unborn children. They should be offered contraception.

Condom

Telling individuals that they must use condoms is not enough. They should be taught how to use a condom to prevent exchange of body fluids. Condoms are ineffective unless used correctly. The following description of condoms appears in the International Encyclopedia of Population (Segal, Kwaku, and Chih-Ye, 1982): "A cylindrical sheath that envelopes the penis, a condom has the advantage of being cheap and simple to use and available without prescription from a physician".

Most condoms are made of latex, basically a form of rubber. Reportedly, condom failure is usually due to human factors, rather than to the mechanical failure of the condom's material. Generally, human failure means (Jennings, 1991):

- Failure to use a condom

- Failure to use condoms all the time

- Failure to use a condom at the right time

- Failure to lubricate the condom properly

- Spillage of semen from the condom into a partner's body cavity because of improper condom handling.

How to Use Condom:

When:

- Use condom for oral, anal, and vaginal sex. Use every single time.

- Put on condom as soon as erection occurs or before pre-ejaculatory fluid appears on tip of penis.

- Be prepared in advance; sexual passion often interferes with clear thinking.

- Practice condom use beforehand. Practice makes perfect.

Removing Condom from Package:

- Carefully inspect package for holes, cracks, and damage. Discard condom if package is open. Carefully open the package to avoid damaging the condom. Inspect condom for holes, cracks, and signs of aging, dryness, or brittleness. Discard if necessary.

Putting on the Condom:

- Leave condom rolled up. Note that condom unrolls only one way. If the wrong side of condom becomes contaminated with moisture from penis, discard condom.

- With the thumb and finger of one hand, gently squeeze and hold the condom tip. Then, place condom over

tip of penis, and unroll condom over full length of penis with the other hand.

- Squeezing the condom tip ensures that no air remains in tip, leaving room for semen. When unrolling condom down shaft of penis, take care to expel all air. Air bubbles can cause the condom to break. As condom nears base of penis, brush pubic hair towards base of penis. This prevents the pubic hair from becoming painfully entangled in the condom. Unroll condom to base of penis.

Lubrication:

- It is best to lubricate the condom. Inadequate lubricate is suspected to be a major cause of condom breakage.

- Water-based lubricants, nonallergenic surgical lubricants (such as K-Y jelly), and contraceptive jellies and foams are appropriate to use and are available in pharmacies. Read the label.

- Do not use petroleum-based lubricants, such as Petroleum jelly. Do not use saliva, cooking oil, or cold cream. Saliva may contain germs. Petroleum-based substances dissolve latex.

- Avoid overlong exposure of condom to spermicides and contraceptive creams. No problem should develop during the times pan of normal use.

Ejaculation:

- After male ejaculation, body movement should stop or be reduced to the absolute minimum. Once the inside of the condom becomes wet, the condom can easily slip off and spill its contents inside the receptive partner. At this point, check with the hand to make sure that the condom is securely in place.

Penis Withdrawal from Partner:

- Hold onto base of condom when withdrawing penis, otherwise it is likely to slip off and spill its contents into receptive partner.

- Before removing condom. Roll condom up shaft of penis, then slide condom off without spilling contents.

- Never reuse a condom.

Disposal:

- Semen is a potentially contaminated substance. Condoms might be disposed of in a bedside container of 1 part bleach and 10 parts water. Most toilet systems can handle condoms.

Storage:

- Condoms should not be exposed to extremes of hot or cold. Condoms should be stored somewhere near room

temperature. Do not store condoms in sunlight. Do not expose condoms with windows in the package to fluorescent light. Do not store condoms in the glove boxes of cars.

Theoretical View on Adolescent

Adolescence has two major aspects, a biological one, and a sociocultural one. The biological changes of puberty mark the initiation or lower end of the adolescent period; the upper end or termination of the adolescence is marked by the inductive of the individual into adult social roles and responsibilities. The biological changes of puberty endow the individual with the physical capability to perform adult functions. Among females, this refers chiefly to the constellation of anatomical and physiological changes that make childbearing and lactation possible. Among males, in addition to the development of secondary sex characteristics, pubertal changes involve anatomical and physiological changes in respiratory, circulatory, and muscular systems that lead to remarkable increases in strength and endurance. There are also hormonal changes that enhance sexuality and aggressiveness (Hamburg, 1989).

When postpubertal youths with adult capacities are retained in childlike roles for lengthy periods of time, the developmental phase of adolescence assumes great prominence, and social inventions are required to cope with the challenges this presents. Indeed, many of the

problems regarding adolescents in developed nations result from premature adoption of adult behaviours that are forbidden to adolescents, such as smoking, drinking, and sexual activity (Hamburg, 1989).

Mann (1988) the director of WHO's Global Programme on AIDS, said on the first World AIDS Day on 1 December 1988 that:

> Young people are crucial to AIDS prevention and control. Very often it is during adolescence that people begin to experiment with sexual activity and, in some regions, drug injecting activity. Paradoxically, while youth may be more likely than others to engage in risk behaviours, they are often less likely to be aware of the risks of HIV transmission (Mann, quoted in Netter, 1989).

Hafner and Welz (1989) said that the broad scope and the seriousness of the burden of illness directly associated with behaviour have been recognized as a major problem of public health and health policy (Hambrug, 1989).

The education is the one factor in adolescent health. Hambrug (1989) said that it is recognized that the life options of adolescents are directly related to the benefits of education.

The Related Studies

Strunin and Hingson (1987) studied a random sample survey of 860 adolescents 16 to 19 years of age, in Massachusetts. Of the adolescent respondents who said they were sexually active (having sexual intercourse or other

sexual contact), the majority know that AIDS is related to blood, other body fluids, and sexual and drug behaviours, but many have limited understanding of the mode of transmission. The confusion and misconceptions about the disease may mean that even among the highest risk groups a substantial minority do not even know what sexual and drug precautions are necessary to avoid transmission of the virus. Only 15% of sexually active adolescents reported changing their sexual practices to avoid contracting AIDS, and only 20% of those who changed mentioned truly effective precautions. Eight percent of respondents said they worried a great deal about contracting AIDS, 54% said they did not worry at all about it. In responding to how likely they thought it is that they will get AIDS in their lifetime, 1% thought very likely and 61% did not think it at all likely. Nearly one quarter of the teenagers (23.2%) believed that someone with AIDS should not be allowed to go to school.

Most of the respondents (97%) thought information about AIDS should be available at schools, and more than half (52%) reported that AIDS had been discussed by a teacher in their schools but not taught. Fifty seven percent believed that there was not enough information available to teenagers about AIDS.

Alan and others (1989) studied in 38,000 out-school and in-school Canadian adolescence about AIDS knowledge. The results showed that most of them knew about meaning

about AIDS, modes of HIV transmission, but the knowledge about HIV prevention is not good enough. For the attitude, they had a negative attitude to AIDS patients, homosexual, and high score negative level to the condom use, but they had a positive attitude to the sexual contact. Eventhough, most of them, worried about getting HIV infection, but they still had the risk behaviours.

Krasnik and Wangel (1990) evaluate the effect of previous AIDS education on AIDS knowledge and sex behaviour among Danish adolescents, a cross-sectional survey was carried out in April-May 1988 amongst 15-16 year-old school children of 9th grade elementary school. Though a cluster-sampling procedure, 45 school classes in nine geographical areas around a country were selected representing various degrees of urbanization. A questionnaire was handed out and collected by the local school physician during a class session. The 728 pupils responding corresponded to a response rate of 89% of the pupils enlisted.

Almost one third (29%) stated that they had had intercourse with the opposite sex. Among who had had intercourse, 24% reported one intercourse only, 39% reported 2-9 and 38% more than 10 experiences of intercourse. More than half of those who had intercourse (56%) had had only one partner, and 10% five or more partners.

The general level of knowledge was high, corresponding to a mean value for all respondents of 9.75 of all 11 questions with no difference between girls and boys. The level of knowledge was not associated with education on the use of condoms nor with ever having had intercourse with the opposite sex.

There was an evidence suggesting that a positive attitudes towards the protective effect of condoms are associated significantly with AIDS education. A vast majority (91%) trust condom to be effective.

Of all respondents, 18% had had intercourse without using a condom, 8% only once, 10% several times - in total corresponding to 63% of those having had intercourse at all.

Of respondents with sexual experience, 35% stated that their last intercourse had been carried out without a condom (10% of all respondents). Using a condom at the last intercourse was not associated with previous AIDS education.

Satisfaction with the AIDS education provided in the school was expressed by 50% of the respondents with no difference between boys and girls. Among the boys, 68% indicated that more AIDS education in school was needed, among the girls 56% ($p<.001$).

Oermann and Gignac (1991) examined the level of knowledge and attitudes about AIDS among 166 Canadian

nursing students. A descriptive design was used. The results showed that, knowledge score increased as students progressed through the programme, attitude scores were relatively low. There was a significant positive relationships between subjects' knowledge of AIDS and attitude scores for the sample as a whole and two levels of students in the nursing programme.

A survey of Swedish adolescent sexual behaviour was conducted in 209 students of an upper secondary school completed a questionnaire. Half the female and 45% of the male students reported having had sexual intercourse. Forty percent had not use contraception at their first intercourse and 23% reported no use of contraceptive at their most recent intercourse. The students considered that they had only a low risk of contracting a sexually transmitted disease. The use of condoms was relatively low.

Taylor and Caudle (1991) studied the teachers trained for development HIV/AIDS programs, needed to:

- provide relevant and up-to-date knowledge about HIV and AIDS

- model appropriate classroom teaching strategies

- provide "teacher-friendly" resources

- increase levels of comfort when teaching about AIDS and sexuality

- articulate a coherent rationale for teaching about HIV/AIDS and sexuality in schools.

They also did a quantitative survey of 490 secondary school students and pretest and post knowledge questionnaire. The result was that there does appear to be a strong correlation between the time duration of AIDS education programs and an increase in students' knowledge and the development of positive attitudes toward people infected by HIV and AIDS.

Werasit Sitthitri (1989) studied about knowledge about AIDS in 15-24 years old Thai adolescents and found that more than half have knowledge about HIV transmission. But the knowledge about HIV prevention and symptoms were not adequate enough.

Wichit Suratraungchai (1990) studied the knowledge about AIDS in primary school teachers who attended the educated executive preparing seminar. The results showed that 44.7% had low level of knowledge about AIDS, 43.5% had fair level and only 7% of respondents had high level of knowledge.

Chuanchom Sakondhavat and et. al (1990) studied about the knowledge, attitude, and practice of sexual activity and family planning among 502 vocational students in Khon Kaen by giving them education about sex education and family planning. A questionnaire was used for pretest

and post-test. The result showed that after receiving the education programme, the students had increased knowledge and attitude toward family planning. For the sexual behaviour, at pretest, the percentage of students who had engaged in sexual contact was 52% (male 71.1%, female 31.3%). The students both male and female who have ever had sexually transmitted diseases was 12.6%.

Chuanchom Sakondhavat and others (1990) also studied sexual behaviours, knowledge and attitude about sexually transmitted diseases in vocational students at one college in the North eastern part of Thailand. A self-report questionnaire was used. The total respondents was 1,214 persons, 1,176 males and 38 females. They were selected by stratified random sampling according to classrooms.

The result showed that the male craftsman certificate level had good knowledge about AIDS and good attitude about AIDS prevention. For the second year male craftsman certificate level students, 38.6% had ever had sexual contact with females, and 25% used to have sexual contact with prostitutes. The condom use among the second year male craftsman certificate level students with prostitute was 61.3% for using every time, 11.3% for never using. The condom use rate for sex contact with other females who were not prostitutes was 10.7% for using every time and 50.3% for never using.

Napaporn Havanon and Pataga Ratanaporncharoen (1990) studied the skill of condom use in 100 female prostitutes and 100 visiting males who went to 5 sexually transmitted disease region centers of Thailand. The measurement was done by observation of their demonstration of using condom with a model. The result showed that all of them performed incorrectly at least at some points. The step that most of them made a mistake was squeezing the air out of the condom tip. Comparison between both groups showed that the female prostitutes were more skill full about condom use than the visiting males. Ten percent of the female prostitutes used condom every time and for visiting males, 29% had never used condom.