CHAPTER II
LITERRATURE REVIEW

In this chapter, the literature review of relevant existing evidence covered the situation of HIV/AIDS infection among in-school youths, strategies for dealing with this situation and those outcomes, the situation of HCT service, and analysis of the factors involved in willingness to use HCT service among in-school youth. The details of this literature review are presented in as follows:

2.1 The situation of HIV infection among Thai youth

2.2 Thailand's response to the troublesome HIV situation among Thai youth

2.3 HIV counseling and testing (HCT) for Thai youth

2.4 Access to Health Care Services

2.5 Factors influencing used and intention to use HCT services among Thai youth

2.1 Situation of HIV Infection among Thai youths

The situation of HIV/AIDS among youths is one of the most significant health problems worldwide. Although most HIV infections are transmitted by unsafe sex among most at risk people (MARPs) such as men who have sex with men (MSM), sex workers (SW), and sharing needles among intravenous drug users (IDU). Youths aged between 15-24 years account for approximately 60-70 percent of these. Hence, there is no doubt that approximately forty percent of new HIV cases are found among the youth. In Thailand, an epidemiological and behavioral surveillance has indicated that the number of new cases HIV infection in youth has not declined over the past 3 to 4 years (Sirinirund et al., 2010). Moreover, the behavior surveillance survey among Grade 11 students and second-year vocational students also indicated escalating HIV risk behaviors while sixty percent of people aged between 15-24 years are also

studying (National statistic, 2011). It can be confirmed that HIV trends are increasing among in-school youth because they have engaged in risk behaviors. Under these conditions, Thailand will be facing several impacts in a few years.

2.1.1 Current HIV Epidemic Trends among Thai Youth

Globally, 1.8 billion young people aged 10-24 years make up one quarter of the world's population. Unfortunately, this large population sector is also susceptible to HIV infection. An estimated 5 million young people in this group are living with HIV and 2 million adolescents aged 10 to 19 years are living with HIV. Thailand has 9.4 million young people aged between 15-24 years. In this age group, 5.6 million people are currently studying in high school and vocational school (National Statistics, 2011). The HIV surveillance in Thailand has shown a worrisome situation concerning HIV trends in Thai youth.

Although Thailand does not include a "youth" category as one of its sentinel populations in HIV surveillance, the percent of HIV among pregnant youth, military recruits and blood donors can be used as proxy populations to track these trends. Moreover, the recent outbreaks among MSM show that HIV has the potential to erupt suddenly.

Among military recruits, considered to be representative of Thai male youth aged 18-24 years (average age of 21 years), HIV prevalence initially increased rapidly in 1989-1993, then declined and remained constant at 0.5%. During 2005 to 2009, HIV incidence in military recruits slightly increased from 1.4 to 2.5 per 1,000 people.

Furthermore, the HIV surveillance among ANC clients in government hospitals found HIV prevalence among the group under 30 years of age to be on the rise since 2008, especially among those aged less than 20 years whose prevalence has increased steadily since 2007 (from 0 in 2007 to 0.20% in 2008 and 0.46% in 2009).

Among blood donors representative of the general population who feel they have no risk for HIV, the HIV prevalence increased from 2.5 to 6 fold for returning donors and by 2 to 7.7 fold for new donors. The highest blood donor HIV prevalence by age group was found in the group aged 21-30 years. For blood donors under 20 years, incidence increased from 0.1 percent to 0.16 percent while the group

aged 20-24 years increased from 0.21 percent to 0.36 percent in 2010. Moreover, the HIV prevalence among blood donor students increased from 0.24 percent in 2009 to 0.4 percent in 2010 (Bureau of Epidemiology, 2010).

HIV prevalence in MSM also indicates escalating trends. According to surveys in 24 provinces, 0.3% of high school students, 2.3% of vocational school students and 4.7%, of military recruits reported they are MSM (Sirinirund et al., 2010). Although the highest HIV prevalence in MSM is in the age group over 29 years, the trend in HIV infection among MSM is increasing for all years and age groups (Chamratrithirong et al., 2007); it is estimated that as many as one in five (21%) new HIV infections in Thailand in 2005 were attributable to unprotected homosexual relations and 22.3% in youths aged 15-22 years.

In 2011 Thailand reported 46.7% of 376,690 AIDS patients in the age group of 25-34 years (Bureau of Epidemiology, 2011), thus reflecting infection with HIV for 7-10 years, or when they were 15-24 years old. In addition, an analysis of new HIV infections estimating the proportion of new HIV infections for the period 2005-2025 found the proportion of new infections to have consistently increased in only two population groups: people having premarital sex and men who have sex with men. Indications are that most of the premarital sex cases involve young people (Kanchanachitra et al., 2009). Although there is no real number of HIV infections in this age group, it has been estimated that 240,000 of Thai youths aged 15-24 years are living with HIV.

The above information indicates that Thailand will also be faced with the burden of an HIV epidemic among Thai youth a few years that is likely to continue into the future. Among youth in high school and vocational school, the significant future human resources are also susceptible to HIV infection because they engage in HIV risk behaviors; so much of the reflecting evidence has been realized.

2.1.2 Vulnerability to HIV Infection among Thai Youth

According a national survey of sexual risk behaviors in 2007, it was revealed that Thai youth aged 15-24 years rapid engage in sexual risk behaviors. Curiosity, physical development, sex drives and changes in social environments have inspired Thai youth to have their first sexual experiences at younger ages. The major

risk sexual behaviors among youth include declining ages for first sexual experience, multiple sex partners and sex without condoms. It is also three times comparing to adults aged 25-59 years (20% and 7.2%) (Chamratrithirong et al., 2007).

In addition, the annual behavioral surveillance survey of Grade 11 secondary students and second-year vocational students in Bangkok from 2008 to 2010 which found sexual experiences to rise from 20% in 2008 to 22% in 2009 and 39% in 2010. Approximately 20% of those had first sexual intercourse before 15 years of age (Srivanichakorn et al., 2009, 2010; Srivanichakorn et al., 2011), possibly indicating that having sex during the school years is increasingly becoming acceptable among Thai youth.

These data suggest that HIV transmission among Thai youth is a serious issue. However, rapid changes in society, culture and lifestyles could lead to increased vulnerability to HIV infection among Thai youth (Chamratrithirong et al., 2007). Moreover, the UNGASS Country Progress Report, Thailand 2010, has pointed out that acceptance of pre-marital sex, sex for money or in-kind payment, lack of condom use, alcohol consumption and deficient knowledge and concern about protecting oneself from HIV make Thai youth vulnerable to HIV infection (Sirinirund et al., 2010) as follows:

2.1.2.1 Sexual norms with increased acceptance of pre-marital sex

One qualitative study in Chiang Mai, Thailand, “Traditions in Transition: Young people at risk for HIV” indicated that Thai youth are at potential risk for HIV. The perspectives on sexual behavior and networking among young people indicate continued acceptance of various issues, especially premarital sex and issues with commercial sex workers. Their perceptions of risk for HIV are influenced by social and sexual transitions. These are the main reasons behind the shift in adolescent sexuality and more complex issues, such as premarital sexual, with respect to sexual freedom (Morrison, 2004).

This issue is also confirmed by survey studies conducted from 2007 to 2010, such as the National Sexual Survey, the Behavior Survey Surveillance (BSS) in 24 provinces and annual behavioral surveillance surveys among students in Bangkok. These are presented below.

A national sexual survey in 2007 among 3,024 youths aged 15 to 22 years found that 48.8% had accepted the idea of sex among unmarried adolescents. In addition, 67.2% of those felt the decision to have sex was a personal choice. Fully 39.1% thought having multiple sex partners during adolescence was normal (Chamratrithirong et al., 2007). These findings are consistent with a national study of in-school youth in 2006-2007 which found that 30% and 56% of vocational and college students accept the practice of living together as a couple before marriage (Bureau of Epidemiology, 2010).

Moreover, the findings of the BSS in 24 provinces indicated a high proportion and increasing trend of sexual experience among Thai youth composed of 3% among Grade 8 students (aged 12-15 years), 15% - 24% of Grade 11 students (aged 15-18 years), and 37% - 43% of vocational students (aged 15-19 years) who had experience in sexual intercourse. Moreover, sexual debut under age 15 is on the rise from 0.3% to 0.8% in male and 0.2% to 0.6% in female vocational students, and from 9% to 14% among military recruits (Bureau of Epidemiology, 2010).

The data from the annual BSS of Grade 11 students and second-year vocational students in Bangkok indicated that Grade 11 students were increasing in sexual experience from 9.0 percent in 2007 to 10, 13 and 18.6 percent from 2008 to 2010, respectively, while the sexual experience of second-year vocational students increased from 20.5 percent in 2007 to 31.3, 32.7 and 39.5 percent from 2008 to 2010, respectively (Srivanichakorn et al., 2009, 2010; Srivanichakorn et al., 2011).

2.1.2.2 Increasing trends in sex for money or in-kind payment

Changing socio-economic and cultural environments into a capitalist economy era has been an important factor attracting more young people to value materialism. Therefore, more youth accept and decide to have sex for some sort of material compensation. According the BSS among school-based youth from 2005 to 2008 sex for money/material items was found to increase with age.

According a national sex survey of Grade 8 and Grade 11 secondary school students and second-year vocational school students in 2008, it was revealed that 0.6%, 1.3%, and 3.2% of the males in these groups and 0.1%, 0.5%, and

1.7% of the females in these groups reported having sex for money/material, respectively (Chamratrithirong et al., 2007).

In Bangkok, the behavioral surveillance survey of Grade 8/Grade 11 secondary students and second-year vocational students during 2008 – 2010 found that approximately 2% to 5% of these students who had sexual intercourse during each year had had sex for money or other material objects (Srivanichakorn et al., 2009, 2010; Srivanichakorn et al., 2011).

2.1.2.3 Lack of skills and motivation in condom use

Even though knowledge surveys have shown high levels of awareness about safe sex and the effectiveness of condoms in preventing HIV and STI, there is still a lack of concern and skill in condom use, or in negotiating condom use when appropriate. This could be an explanation non-condom use during commercial sex or with other non-marital partners.

The national sex survey showed that only 50% to 70% of male students, military recruits and male factory workers reported using a condom every time they had sex with a sex worker. Only one in four, or 20% to 40% of male and female students, used a condom every time they had sex with their girlfriends or boyfriends (Chamratrithirong et al., 2007).

Among Thai MSM, despite increased openness about sexual orientation, the survey data has persistently shown low levels of condom use since 2004 with only slight increases to 50% use as of 2008 (Sirinirund et al., 2008; Sirinirund et al., 2010).

The data from the annual BSS of Grade 11 students and second-year vocational students in Bangkok reported the percentage of condom use during sexual activity with unfamiliar sex partners among second-year vocational students had decreased from 55% in 2009 to 34% in 2010 while the percentage of Grade 11 students had decreased from 54.2% to 46% when they had sex with unfamiliar sex partners and from 30.5% to 25% when they had sex with their girlfriends or boyfriends (Srivanichakorn et al., 2009, 2010; Srivanichakorn et al., 2011).

2.1.2.4 Alcohol consumption creates potential risk for unsafe sex

Male students have more pre-marital sex than females and are less aware of their HIV serostatus. Also, they are less interested in receiving information about STIs and AIDS, perhaps because of fear and social stigmas (Sirinirund et al., 2010). Moreover, many studies have shown that unsafe sex is more likely when one is drunk. And youth who drink also use the internet to view pornography because of easy access and lack of external controls. In a survey of Grade 8 high school students (mean age = 13) in 2005-2008, it was found that 34% to 36% of males and 18% to 25% of females had consumed alcoholic beverages (Chamratrithirong et al., 2007).

2.1.1.5 Lack of knowledge and concern for self-protection against HIV

According to the BSS among male and female students at Grade 8, Grade 11 and second-year vocational school levels in 2008, the knowledge score based on the UNGASS indicators was low (both sexes). The percentage who were able to answer all five knowledge questions correctly was only 37.42%; Grade 8 students had lower correct knowledge than Grade 11 students and second-year vocational students, while 46.2 percent of Vietnamese youth of the same age had access to this knowledge by following UNGASS indicators (Hung et al., 2008).

According to the situation of the HIV/AIDS epidemic and HIV risk behaviors among in-school youth presented above, that the indications are that the situation of HIV/AIDS in youth is a critical and complicated issue. The high rates of HIV infection among the youth make it necessary to find programs to prevent infection and mitigate the effects of HIV in this age group. If Thailand cannot afford to handle this situation, the country will be faced with the effects of several factors. The critical impacts include the decline of the quality and quantity of human resources, decreased productivity and increased health expenditures in the future because youths are important human resources for the nation.

2.2 Thailand's response to the troublesome HIV situation among Thai youth

In light of the above HIV situation among Thai youth presented, a number of troublesome issues and impacts have been reflected that will occur in the near future. Thailand taken measures toward solving these problems with efforts of prevent HIV infection in young people at the policy and implementation levels. Over the past several years', a number of outcomes have supported universal access to HIV prevention, treatment, care and support declared by UNAIDS/WHO in 2006. However, in order to achieve "getting to zero", the global goal for combating HIV, there are also some challenging issues against HIV infection in young people who have been difficultly controlled. The details are presented below.

2.2.1 Policy responses for HIV prevention among youth

2.2.1.1 National AIDS plan

Youth are one of the target populations in the National AIDS Program (NAP), and the National AIDS Prevention and Alleviation Committee (NAPAC) priority group included in the resolution of July 2009 to reduce HIV incidence by 2011. The implementation of measures to the policy response and plan include AIDS and sex education and life skills in AIDS prevention, support for a social environment with positive information about sex and AIDS prevention and support for access to health services, increased youth participation and implementation of AIDS prevention.

2.2.1.2 Reproductive health policy

In addition to the NAP strategy, the National Reproductive Health (RH) strategic plan for 2010-2014 by the Department of Health (DOH) also supports many of the same goals in addition to the prevention of teen pregnancy. The strategy aims to prevent and reduce the problem of underprivileged children by focusing on youth through coordination and collaboration among organizations at the national, zonal, provincial and community levels with concrete directives for public and private organizations, including LAOs with targets on STIs, HIV and teen pregnancy, through youth-friendly services in various settings, especially in hospitals.

The provincial RH plan to reduce STI/HIV and teen pregnancy included a pilot program in three provinces in 2009, then expansion to 10 provinces in 2010, and plans to expand to all provinces by 2014.

2.2.2 Implementation and outcomes of HIV prevention among youth

2.2.2.1 Capacity development for youth peer leaders

The capacity development project for youth peer leaders has been established both in schools and communities based on cooperation with government, non-government and community organizations.

The initial activities launched in 2004 when the Bureau of AIDS, TB and STIs (BATS) collaborated with NGOs, disease control offices and the provincial chief medical offices to develop a system of youth peer leaders for HIV prevention at the community in 30 provinces. The activities had also expanded into 43 provinces by 2009. The peers participate in local planning and implementation of community AIDS prevention activities.

During the same period, a collaborative activity was conducted between the MOPH, the Ministry of Education (MOE) and PATH. BATS and the MOE developed a system of peer leaders for AIDS prevention in schools by integrating AIDS, STIs, tobacco and alcohol into the training of peers so they can advise their fellow students through direct communication and activities. During 2006 -2009,there were 98 educational institutions participated in 35 provinces, including 45 high schools, 23 vocational schools and 30 colleges.

Youth participation was advocated by contesting the web page design, AIDS campaign songs and slogans, developing the guidelines for parents to communicate about AIDS and sex with their children and creating the e-learning programs for youth and the general population.

Furthermore, allies and networks, such as the system of colleges and the Ministry for social welfare, have conducted activities to support HIV/AIDS knowledge and prevention.

Moreover, there are links among school-based networks and the community by joint AIDS prevention activities and support for children and youth to conduct “friends-help-friends” activities, development of adult and youth peer

leaders so they can serve as person resources in raising AIDS awareness, sex education and RH, and as advocates for budget for youth facilities, such as a "user-friendly center for health services in the village." Child and youth councils: There has been support for the involvement of child and youth councils by building the capacity of members at the provincial level. The DOH has implemented a program among council members to raise concern, knowledge, understanding and motivation in accordance with RH goals and increasing youth participation in RH, both in and out-of school. This activity has covered 53 provinces.

2.2.2.2 Comprehensive sex education and life skills training

Sex education and life skills training are accepted as important strategies for preventing HIV among youth. During 2003-2008, it was integrated into the educational system and supported by Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM). The implementation was established at all educational levels: high schools, vocational schools and universities. The NGO Program for Appropriate Technology in Health (PATH) plays a role in promoting sex and AIDS education in high schools and vocational schools through curriculum development and educational media with training for teachers, managers and educational supervisors. So far, 68% of vocational schools have been covered by this program.

The outcomes evaluation in 2009, however, found only knowledge gains among youth in target areas, but prevention skills for safe sex behavior were not yet optimal. Hence, the new strategy stresses on skills building for youth in concurrence with their attitudes, beliefs and lifestyles. The new goal is to cover 2.4 million youth aged between 12 and 24 years in 43 provinces.

At the university level, the DOH supports RH instruction at colleges through the Ratchapat University network by supporting the RH curriculum implementation through relevant course programs to ensure that college/university students have access to RH information and can apply to their work with youth. So far, 13 Ratchapat Universities are participating, and there are plans to expand to all branches.

2.2.2.3 Youth-friendly service provision

The MOPH has set a target for 2014 that 80% of its hospitals will have standard Youth-friendly health services (YFHS). At the end of 2009, about

10% of MOPH hospitals at all levels were participating. MOPH is also collaborating with partners to support YFHS at a variety of service sites in 43 provinces by the GFATM budget supporting.

At the same time, since 2008, PATH attempts to promote understanding about HIV among youth and has applied outreach strategies to assist youth in establishing the "Love Care Clinic" project. This project provides services for youth including counseling, contraception, condom distribution, diagnosis and treatment of STIs, screening for cervical cancer, HCT, and referral.

2.3 HIV counseling and testing (HCT) for youth

Since 2006, when United Nations Member States committed to scaling up services and interventions toward the goal of universal access to HIV prevention, treatment, care and support by 2010, HIV testing has been considered as the most vital service toward achieving these goals. In 2010, information from 183 of the 192 United Nations Member States, indicated progress made and remaining challenges toward achieving universal access. "Getting to zero" for new cases, AIDS-related deaths and stigmas by 2015 was picked up as the optimum goal for combating the HIV situation. Focusing on the serious situation of HIV among youth as presented above, HCT is considered as the entry point for HIV treatment and secondary prevention aimed at reducing risk behaviors and new infection cases, especially in young people. Three issues were presented, i.e. the four types of HCT services supported by the WHO, the advantages of HCT as a strategy for achieving "getting to zero" and the characteristics of HCT for youth.

2.3.1 Types of HIV testing

To address the issue of HIV testing types, the foundations of the HIV testing scale-up are required to improve protection from stigma and discrimination as well as assured access to integrated prevention, treatment and care services. The conditions under which people undergo HIV testing must be anchored in a human rights approach which protects their human rights and pays respect to ethical principles. Four types of HIV testing; voluntary counseling and HIV testing,

diagnostic HIV testing, routine HIV testing and mandatory HIV testing were recommended (UNAIDS/WHO, 2004a). These HIV testing types are described below

2.3.1.1 Voluntary counseling and testing (VCT)

VCT should be initiated in HIV testing by clients. Learning HIV status provided through voluntary counseling and testing remains critical to the effectiveness of HIV prevention. UNAIDS/WHO promote the effective promotion of knowledge of HIV status among any population possibly exposed to HIV through any mode of transmission. Pre-test counseling may be provided either on an individual basis or in group settings with individual follow-up. UNAIDS/WHO encourage the use of rapid tests so results are provided in a timely fashion and can be followed up immediately with a first post-test counseling session for both HIV-negative and HIV-positive individuals.

2.3.1.2 Diagnostic HIV testing

Whenever a person shows signs or symptoms consistent with HIV-related disease or AIDS, the form of clinical diagnosis and management is indicated. This includes HIV testing for all tuberculosis patients as part of their routine management.

2.3.1.3 A routine offer of HIV testing by health care providers

HIV testing should be offered to all clients under three conditions: 1) in clients assessed for a sexually transmitted infection at clinics or elsewhere so a sexually transmitted infection can facilitate tailored counseling based on knowledge of HIV status; 2) in the context of pregnancy to facilitate an offer of antiretroviral prevention of mother-to-child transmission (PMTCT); and 3) in clients in clinical and community-based health service settings where HIV is prevalent and antiretroviral treatment is available (injected drug use treatment services, hospital emergencies, internal medicine hospital wards, consultations etc., but all in patients who are asymptomatic).

Explicit mechanisms are necessary in provider-initiated HIV testing to promote referral to post-test counseling services emphasizing prevention for all clients being tested and with medical and psychosocial support for those testing positive. The basic conditions of confidentiality, consent and counseling apply, but the

standard pre-test counseling used in VCT services is adapted to simply ensure informed consent without a full education and counseling session. The consent is as follows: The clinical and prevention benefits of testing, the right to refuse, and the follow-up services that will be offered and in the event of a positive test result, the importance of anticipating the need to inform anyone about ongoing risks who would otherwise not suspect they were being exposed to HIV infection.

2.3.1.4 Mandatory HIV screening

UNAIDS/WHO support mandatory screening for HIV and other blood-borne viruses of all blood destined for transfusion or the manufacture of blood products. Mandatory screening of donors is required prior to all procedures involving transfer of bodily fluids or body parts, such as artificial insemination, corneal grafts and organ transplants.

Furthermore, the statement on Human Rights & Universal Access to HIV Prevention, Treatment, Care & Support established by the UNAIDS Reference Group on HIV and Human Rights suggests a right-based approach to HIV testing that should be addressed simultaneously (UNAIDS, 2002):

a. Ensuring an ethical process for conducting the testing, including defining the purpose of the test and benefits to the individuals being tested; and assurances of linkages between the site where the test is conducted and relevant treatment, care and other services, in an environment that guarantees confidentiality of all medical information;

b. Addressing the implications of a positive test result, including non-discrimination and access to sustainable treatment and care for people who test positive.

c. Reducing HIV/AIDS-related stigma and discrimination at all levels, notably within health care settings;

d. Ensuring a supportive legal and policy framework within which the response is scaled up, including safeguarding the human rights of people seeking services;

e. Ensuring that the healthcare infrastructure is adequate to address the above issues and that there are sufficient trained staff in the face of increased demand for testing, treatment and related services

However, voluntary counseling and testing involve routine offers for HIV testing by health providers and only 2 types of HIV testing are used for scaling up access to HIV testing leading to HIV treatment with ARV.

2.3.2 Advantages of HCT to Combat the HIV Situation among Youth

HCT is the most significant means of combating HIV/AIDS because youth who obtain HIV testing will learn about their risk behaviors and, therefore, reduce risk behaviors. HCT also connects infected youth with proper treatment and care.

2.3.2.1 HIV Risk Behavior Reduction

Risk behavior is the most important outcome for evaluating the effectiveness of HIV testing. According to the literature, especially in Africa where AIDS prevalence continues to rise in most countries, there is a critical need for effective and feasible interventions for HIV risk behavior modification. Increasingly, expansion of HIV testing services has been advocated as a central component of public health efforts to reduce HIV incidence through high-risk behaviors. Most studies that measure risk behavior use self-report instrument for measuring. The questionnaires seem to similar to one another, e.g. number of sex partners during a certain period of time (1,3,6,or 12 months), number of current sex partners, consistent condom use and condom use in last sexual intercourse. Several studies have revealed risk behaviors as declining after youth had access to HCT services because the aforementioned encourage youth to evaluate their behavior (Cremin et al., 2009; Farnham, Pinkerton, Holtgrave, & Johnson-Masotti, 2002; Glick, 2005; Wusu & Okoukoni, 2011). Furthermore, consequences must be considered before deciding to have a blood test and returning to obtain the results within post-counseling. Youth self-awareness is related to a meta-analysis study indicating that only HIV testing was unable to help achieve behavioral modification and perception of risks with consequences as key factor in changing behaviors, or at least triggering intent to change behaviors (Julie, Kevin, George, Caitlin, & Michael, 2008). The meta-analysis of cost-effectiveness of HCT to prevent sexual transmission of HIV was conducted in the United States. The researchers found that HCT was able to reduce 20-50% of risk behaviors.

In Thailand, studies on sexual risk behavior reduction associated with voluntary HIV counseling and testing in HIV infected patients have indicated that more than 80% of participants reported that their sexual activity and their number of sexual partners have decreased since they become aware of their positive HIV test results. Compared to the control group in the aforementioned study, more frequent abstinence was reported (42% and 14%) as well as more frequent use of condoms during sexual intercourse (44% and 14%). These findings provide evidence of the value of voluntary HIV counseling and testing in contributing to the reduction of HIV risk behaviors (Müller et al., 1995).

2.3.2.2 Access to Effective Antiretroviral Treatment

When youth at risk have accessed HCT service and received their positive results, they also increase their chance of access to treatment and support by the referral system. Awareness of HIV positive status will increase the likelihood of infected youth having access to effective ART which can increase long-term survival (Girard et al., 2010).

All country worldwide have exerted efforts toward scaling up PLWHA and access to ART as necessary with follow by each national HIV/AIDS policies/strategies since WHO has declared the universal access to prevention, care and treatment policy in 2006. Even in poor countries, Ethiopia, is able to increase the number of patients started ART increased from 3500 to more than 5700 per month after a millennium AIDS campaign with the objective of increasing the number of people tested for HIV through universal voluntary counseling and testing had announce for a year.

Thailand was able to scale up 77.76% PLWHA to ART in 2009 with increases from 41.0%, 52.9%, and 67.14% in 2006, 2007 and 2008, respectively (Sirinirund et al., 2010). This report may indicate that Thailand's national scheme can provide ART for all PLWHA. Unfortunately, more than 80 % of PLWHA who access ART have CD_4 less than 100 cells/mm^3 at the ART starting while ART will be provided to either symptomatic or asymptomatic PLWHA with CD4 less than 200 cells/mm3 under the national scheme. Moreover, the newest policy on ART for PLWHA will provide ART to PLWHA with CD_4 lower than 350 cells/mm3 followed by new guidelines for ART among adolescents and adults as declared by

UNAIDS/WHO (UNAIDS/WHO, 2010, 2011b). The most challenging of this new policy is screening asymptomatic HIV infected people to gain access to ART. Therefore, the more youth learn their HIV positive results, the sooner they can receive ART.

In addition, access to HIV testing among youth is not only effective for youth who have been tested, but it also benefit for society which is a good consequence for youth as presented below:

Although the situation of the HIV epidemic among Thai youth is serious, learning of their own HIV sero-status and gaining access to prevention, treatment and care can be a good consequence for society, i.e. reduction of new case infections, decreasing morbidity and mortality rates, and maintenance of human resources with increased ability to work and earn more money for the country.

2.3.2.3 Reduction of New HIV Infections

Access to HIV testing leads to behavior changes and receipt of ART in the early stages, which subsequently leads to fewer new cases of HIV infection. According to a meta-analysis of voluntary HIV counseling and testing (VCT) and Behavioral Risk Reduction in Developing Countries in 1990–2005, VCT recipients were found to be significantly less likely to engage in unprotected sex when compared to behaviors before receiving VCT, or as compared to participants who had not received VCT [OR 1.69; 95%CI 1.25–2.31]. (Denison, O'Reilly, Schmid, Kennedy, & Sweat, 2008). This result reflects that VCT leads to changes in risk behaviors. Furthermore, another meta-analysis of condom effectiveness in reducing sexually transmitted HIV revealed that condoms could reduce risk of HIV infection by 69% (Weller, 1993), thus indicating that people who were tested with HIV tend to reduce their risk behaviors which can subsequently reduce transmission.

Another reason confirming the effectiveness of HCT on reducing new case HIV infections is that HIV positive persons can gain access to ART in the early stages of the disease. Several studies have affirmed that receiving ART at CD4 200-350 cells/mm3 makes the treatment more effective as viruses are decreased; it also decreases infectivity by 2.5 times (Porco et al., 2004). Moreover, a study of the initiation of ART and protecing uninfected sexual partners from HIV infection was conducted among 1,763 HIV-serodiscordant couples at 13 sites across Africa, Asia

and the Americas. The researchers designed to evaluate whether immediate versus delayed use of ART by HIV-infected individuals would reduce transmission of HIV to their HIV-uninfected partners and potentially benefit the HIV-infected individual as well. Those HIV-serodiscordant couples were randomized to one of two groups. In one group, the HIV-infected person immediately began taking ART when his/her CD_4 = 350-550 cells/ mm^3 (immediate ART group). In the other group, the HIV-infected person began ART when his or her CD_4 cell count had fallen below 250 cells/mm^3 or if he/she developed an AIDS-related illness (the delayed ART group). The findings of this study revealed that initiation of ART by HIV-infected individuals substantially protected their HIV-uninfected sexual partners from acquiring HIV infection with a 96 percent reduction in risk of HIV transmission. Additionally, there were significant differences in sexual transmission of HIV to an uninfected partner between the HIV-infected person in the immediate ART group and the delayed ART group (Cohen & Corbett, 2011).

2.3.2.4 Decreased Morbidity and Mortality Rate for HIV Infections

Access to HIV counseling and testing service in the early stages enables patients to gain access to ART early which subsequently decreases morbidity and mortality rates. According to a study of early initiation of ART and associated reduction in mortality, morbidity and defaulting in a nurse-managed, community cohort in Lesotho, the researchers described survival probability among patients initiating ART at CD_4 cell counts 200 or less and more than 200 cells/mm3 and assessed associations between baseline CD_4 cell counts and mortality, morbidity, loss in follow-up and hospitalization using Cox regression by adjusting for confounders identified as a priority. They found patients initiating ART at CD_4 cell counts of less than 200 cells/ mm3 to be 68% less likely to die (95% CI= 0.20–0.50), and 39% less likely to be lost in follow-up (95% CI= 0.43–0.87). Initiating ART at CD4 cell counts of more than 200 cells/mm^3 was also associated with a 27% reduction in the rate of incident morbidity (95% CI = 0.65–0.82) and a 63% decreased rate of hospitalization (95% CI= 0.19–0.73). (N. Ford et al., 2011) Moreover, receiving ART with CD_4 cell counts of less than 350 cell/mm^3 can increase long-term survival by least 7.9 years (Girard, et al., 2010).

2.3.2.5 Increases Economic Benefits

As the access to HIV counseling and testing leads to early access to ART, therefore, good health is a significant result. Morbidity and mortality rate are reduced which leads to improved economic status because these HIV positive youth will become important human resources capable of greater productivity for society according to a study of when to initiate highly active antiretroviral therapy in sub-Saharan Africa.

A cost-effectiveness study in South African indicated the effective outcomes of access to ART, e.g. mean life-expectancy of 6.2, 18.8, 21.0 and 23.3 years; discounted (8%) QALYs were 3.1, 6.2, 6.7 and 7.4; and discounted lifetime costs were US$5,250, US$5,434, US$5,740, US$6,588 for No-ART, and therapy initiation at <200 cells/mm^3, 200–350 cells/mm3 and >350 cell/mm^3 scenarios, respectively (Badri et al., 2006). Furthermore, increasing long-term survival by at least 7.9 years with receipt of ART when CD_4 cell counts are less than 350 cell/$cumm^3$ has an incremental cost-effectiveness ratio of $1,200 per year of life saved compared to the beginning of the antiretroviral drugs at CD_4 <200 cell/$cumm^3$ (Girard, et al., 2010).

The above evidence reflects the advantages of HCT in combating the HIV epidemic by reducing personal and social impacts due to HIV infection. Therefore, many countries have attempted to develop strategies to scale up HIV testing among youth who have been identified as the center of the HIV epidemic.

2.3.3 Strategies for Raising Access to HCT Services among Youth

According to the aforementioned policy on HIV testing for youth declared by UNAIDS/WHO, special attention should be given to the provision of confidential youth-friendly health services (UNAIDS/WHO, 2004a). Several countries have been trying to find a service model that increases access to HIV testing among youth by developing youth-friendly health service strategies. Some countries in Africa and America have applied these proactive strategies and youth-friendly services by integrating HIV testing in reproductive health and other health services, changing laws regarding the ages requiring parental consent for HIV testing, training staff for greater

understanding and necessary abilities for youth services, developing peer counselors and routine HIV testing.

Although UNAIDS/WHO have recommended four types of HIV testing consisting of the following: 1) Voluntary Counseling and Testing (VCT), 2) Provider Initiated Counseling and Testing (PICT), 3) Diagnostic HIV testing and 4) Mandatory HIV testing (UNAIDS/WHO, 2004a), voluntary counseling and testing and routine offers of HIV testing by health providers are the only 2 types of HIV testing used to scale up access to HIV testing which subsequently leads to HIV treatment with ARV.

One initial study about HIV testing focused on youth was an exploratory study in Kenya and Uganda in 2001. The focus group discussions and in-depth interviews with youth, parents, service providers, community members and administrators were used. The findings indicated that youth testing experiences did not always match the VCT model and were insensitive to the needs of youth, most tested youth intended to practice safer sex, and youth wanted confidential services and full disclosure of test results (Horizons, 2001). According the findings of this research, the researcher proposes strategies for improving the VCT services for youth by providing counseling/training for service providers, using a separate room and alternative locations so youth will not meet adult family members when seeking VCT, reducing the price of testing services, establishing a referral system for young clients, improving outreaches to schools and youth groups, creating a multimedia campaign to inform youth about VCT, opening an adolescent counseling and recreational center and introducing youth-friendly VCT services at existing facilities (McCauley, 2004).

In Uganda, the AIDS Information Center (AIC) and Naguru Teenage Information and Health Center (NTIHC) were established in 2004. The AIC project provides stand-alone VCT sites for the general population, not special sites for youth. However, the program has established a youth corner behind the regular adult clinic with a separate gate so youth can enter in privacy. Furthermore, staffs have developed a counseling-training manual to train counselors in delivering youth-friendly VCT services. The NTIHC offers the integration of free reproductive health services to youth, including diagnosis and treatment of STIs, family planning, pregnancy testing and counseling with antenatal and postnatal care. The results of these projects have found the youth to be highly satisfied with the new youth-orientated services and

clinics unable to handle all of the young clients who came. The AIC attracted more young women who paid for the service themselves rather than relying on a partner to pay for VCT. Youth were satisfied with peer counseling when they faced particular challenges in their counseling roles (McCauley, 2004; McCauley et al., 2004). The study in the sub-Sahara reported that many youth accepted VCT and wanted to learn their HIV sero-status when opportunities were provided for alternative VCT delivery models, such as mobile VCT, routine offers of VCT and home-based VCT (Joseph & Fredrick, 2007).

Similarly, many studies in America have attempted to promote access to VCT among their population, including the youth population. One study, the ACCESS (Adolescents Connected to Care, Evaluation, and Special Services) Project, has developed social marketing to promote HIV testing among adolescents. The implementation of the ACCESS program consisted of the following: 1) standard advertising print, radio and video; 2) youth-friendly magazine; 3) presentations of other lifestyle issues for youth, such as fashion, music and dating with a national media kit; 4) each city built a network of youth-friendly health centers that agreed to provide free counseling and testing services for youth and 5) availability of youth-friendly HIV counseling, testing and care, e.g. a local referral phone line was established that could be promoted in all materials. The findings of this study indicate the program to have significantly increased the numbers of youth who obtained HIV testing from the base line in getting tested results and after getting test results. Furthermore, most youth who get tested were younger (72% aged 13–21 years; 28% aged 22–24 years) (Futterman et al., 2001).

According to previous studies, efforts to scale up access to HIV testing are the key to achieving universal access to prevention, care and treatment. Although traditional VCT seems to be best method, small numbers of tested clients remain a problem. Alternative strategies and routine offers of HIV testing have been a solution for dealing with this problem. All countries in the sub-Sahara and the US have implemented this strategy (Curt et al., 2005; Fernandez et al., 2005; Hutchinson, Branson, Kim, &Farnham, 2006; Paltiel et al., 2005; Sheri et al., 2006; Steen et al., 2007; Timothy et al., 2009; Wamai, Achom, Kabatesi, Wanyenze, &Bunnell, 2007; Wynia, 2006).

Previous studies in America have shown that routine HIV testing, which is offered by health care providers, is a very important strategy, especially in high prevalence areas (Curt, et al., 2005) including Hispanic populations in south Florida. Research findings have revealed that twenty-one percent of the sample had been tested for HIV and would accept free HIV testing. Among individuals who had never been tested, nearly 81% (156/193) had never been offered an HIV test and 69.4% (134/193) would accept a test if it were recommended by a provider (Fernandez, et al., 2005). However, only 38% of providers were willing to offer the HIV test all of the time. The most frequently encountered barriers to offering HIV testing were inadequate time (67/108 [62%]), inadequate resources (65/108 [60%]) and concerns regarding provision of follow-up care (64/108 [59%]) (Arbelaez et al., 2010).

In developing countries, Botswana is the most successful country in scaling up HIV testing. Botswana has initiated implementation of routine HIV testing since 2004. Two previous studies in 2006 and 2007 reflected their achievement. The first study in 2006, Routine HIV Testing in Botswana: A Population-Based Study on Attitudes, Practices, and Human Rights Concerns, was conducted by Sheri and colleagues. The researchers found that, 11 months after the introduction of routine HIV testing policy, most participants (81%) reported being extremely or very much in favor of routine testing. The majority believed that this policy would decrease barriers to testing (89%), HIV-related stigma (60%), and violence toward women (55%), while increasing access to antiretroviral treatment (93%). At the same time, 43% of the participants believed routine testing would lead people to avoid going to the doctor for fear of testing and 14% believed that this policy could increase gender-based violence related to testing. Routine testing appears to be widely supported and may reduce barriers to testing in Botswana. As routine testing is adopted elsewhere, measures should be implemented to assure true informed consent and human rights safeguards, including protection from HIV-related discrimination and protection of women against partner violence related to testing (Sheri et al., 2006). During two and a half years after implementing routine HIV policy, the achievements of this policy were reflected in a total of 60,846 persons who were tested through routine HIV testing in 2004, 157,894 in 2005 and 88,218 in the first half of 2006. Testing rates in the population through

routine HIV testing were 40, 93, and 104 per 1000 persons, respectively (Steen et al., 2007).

In conclusion, research-related services to increase access to HIV counseling and testing among the youth report three main strategies: 1) increasing the target, e.g. advertising media and entry to the youth groups in schools, mobile services, and door-to-door; 2) providing youth-friendly health services sensitive to the needs of youth, e.g. the provision of a youth corner separate from services for adults, peer counseling, trained providers, integration into sexual and reproductive health services and changing laws regarding the ages requiring parental consent for HIV testing; and 3) offering routine HIV testing by health care providers in health care units. However, UNAIDS/WHO recommends that the HCT services for youth should require special attention to their needs through the provision of confidential youth-friendly health services (UNAIDS/WHO, 2004b).

2.3.4 Characteristics of HCT Services for Youth

Youths face many barriers to using sexual and reproductive health services. For example, laws and policies may restrict young people's access to affordable services and correct information, or they may feel embarrassed at being seen at clinics or, simply, they may not have information that such services exist. HCT is one of the sexual and reproductive health services which is the most stigmatic for youth. The youth-friendly health services (YFHS), therefore, that should be applied to arranging HCT are those that attract young people, respond to youth needs, and retain young clients for continuing care. YFHS are based on a comprehensive understanding of what young people in a given society or community want, and out of respect for the realities of their diverse sexual and reproductive lives. The aim is to provide all young people with services they trust and feel are intended for them.

The characteristics of youth-friendly HCT (YFHCT) services need to be accessible, equitable, acceptable, appropriate, comprehensive, effective and efficient. These characteristics are based on the WHO Global Consultation in 2001 and discussions by a WHO expert advisory group in Geneva in 2002. They require fulfillment of the rights of youth; client registration should be easy and confidential; health care providers should be technically competent in youth-specific areas and

health promotion should be offered with prevention, treatment and care relevant to each client's maturation and social circumstances; support staff should be understanding and considerate in treating each youth client; a safe environment should be provided at a convenient location; youths should be well-informed about services and their rights; staff should be encouraged to respect the rights of others; services should be appropriate, comprehensive and guided by evidence-based protocols and guidelines with a management information system.

In addition, the WHO guidelines for quality assessment of health services for adolescent/young clients stipulate that adolescent-friendly services should have the following five characteristics: 1) Equitable: all adolescents, not just certain groups, should be able to obtain the health services they need; 2) Accessible: adolescents should be able to obtain the services provided; 3) Acceptable: health services should be provided in ways that meet the expectations of adolescent clients; 4) Appropriate: health services required by adolescents must be provided and 5) Effective: the right health services must be provided in the right way and a positive contribution should be made to the health of adolescents. The details of YFHCT characteristics are presented below:

2.3.4.1 Equitable: All adolescents/youth, not just certain groups, should be able to obtain the HCT services they need, including the following: 1) Policies and procedures should not restrict the provision of HCT services on any terms; 2) Health-care providers should treat all adolescent/youth clients with equal care and respect, regardless of status; and 3) Support staff should treat all adolescent/youth clients with equal care and respect, regardless of status.

2.3.4.2 Accessible: Adolescents/youth should be able to obtain the HCT services provided. Accessible HCT services are composed of 5 characteristics, i.e. policies and procedures should be in place to ensure that HCT services are either free or affordable to the youth; the point of HCT service delivery should have convenient hours of operation; adolescents should be well-informed about the range of available HCT services and how to obtain them while community members should understand the benefits adolescents will gain by obtaining the HCT services they need with support of their provision.

2.3.4.3 Acceptable: HCT services should be provided in ways that meet the expectations of adolescent clients. There are 7 characters of acceptable HCT services: 1) Policies and procedures should be in place to guarantee confidentiality; 2) the point of HCT service delivery must ensure privacy; 3) health-care providers should be non-judgmental, considerate, and easy to relate to; 4) the point of HCT service delivery should ensure consultations occur within a short waiting time, with or without an appointment, and (where necessary) with swift referral; 5) the point of HCT service delivery should have an appealing and clean environment; 6) the point of HCT service delivery should provide information and education through a variety of channels; and 7) adolescents should be actively involved in designing, assessing and providing HCT services.

2.3.4.4 Appropriate: The health services adolescents need are provided that required package of health care is provided to meet the needs of all adolescents either at the point of health service delivery or through referral linkages, including providing vital information for youth about HIV risk self-assessment, providing complete information about HIV testing, giving at risk youth a chance to self-decide to get HIV testing, giving information about the way to reduce risk behaviors and properly referring youth who are HIV positive.

2.3.4.5 Effective: The right HCT services should be provided in the right way and make a positive contribution to the health of adolescents in terms of the following 3 characteristics: 1) Health-care providers should have the required competencies to work with adolescents and provide them with the required HCT services; 2) Health-care providers should be able to dedicate sufficient time to working effectively with their adolescent clients and 3) the point of HCT service delivery should have the required equipment, supplies, and basic services necessary to deliver the required HCT services.

Although the characteristics of YFHS should include the aforementioned characteristics and Thailand has established and developed VCT services for more than 25 years, YFHCT seems to attract less interest than MARPs. The existing HCT services available in Thailand are present as follows:

2.3.5 Existing HCT Services Available for Youth in the Thai Health System

The first HCT service in Thailand, VCT, was established in 1991 in Chiang Mai with the support of the Thai-Australian Northern AIDS Prevention and Care Programme and Communicable Disease Control Region 10. It was followed by the opening of an anonymous clinic by the Thai Red Cross in Bangkok. These VCT settings were designed to provide preventive measures to the general population. Subsequently, the MOPH promoted the development of anonymous clinics in public hospitals nationwide. VCT are now available at approximately 1,000 hospitals and clinics across the country. These services can be delivered in specific HIV counseling units or integrated into outpatient departments (OPD) or general health counseling units. Thailand has a comprehensive and extensive network of voluntary counseling services staffed by trained counselors and supported by extensive referral networks (Chariyalertsak, Aramrattana, & Celentano, 2008).

However, Thailand has not developed a service model for HIV testing provided specifically for youth in state health services. The Department of Health has provided youth-friendly health services in some public hospitals since 2008; however, these sexual and reproductive health services do not focus on HIV testing. Youth-friendly services provided by an NGO have attempted to promote understanding about HIV among youth. In 2008, for example, the Program for Appropriate Technology in Health (PATH) applied outreach strategies to assist youth to establish the “Love Care Clinic” project. This project, however, is provided only in Bangkok and 6 other provinces.

While Thailand VCT services have been conducted for more than 20 years, most studies about HCT in the Thai context have focused on VCT in MARPs and the general population. A small number of studies have focused on VCT among youth. Furthermore, the issue of stress in HIV testing histories and their behaviors or disclosure of persons who have been tested and reasons for testing do more than explore why some risk persons don’t want to be tested (Jiraphongsa et al., 2002; Kawichai et al., 2007; Kawichai et al., 2006; S Kawichai et al., 2005; Kiertiburanakul, et al., 2008; Liu et al., 2003; Müller et al., 1995; Nhurod et al., 2010; Wimonsate et al., 2010).

One study about reasons for HIV testing in Thailand conducting in a university hospital in Bangkok found the prevalence of HIV infection to be 1.0% in 221 patients with a median age of 35.5 (range, 15.8-72.3) years. The most common risk for HIV transmission was heterosexual relations (63.8%). The most common reason for HIV testing was preoperative screening (41.2%). Of all, 52.9%, 37.1%, and 10% were diagnosed as AIDS, asymptomatic and symptomatic patients, respectively. The median CD_4 count at HIV diagnosis was 260 cells/mm^3. (Kiertiburanakul et al., 2008) Although this research does not mention the youth, the findings of this study may be generated to youth groups. This study reflects that clients who had been tested did not perceive their risk and testing was a medical need but not the clients' need. And the problem of most HIV-positive results, i.e. delayed stage of HIV positive status, means the access time was too late to receive effective treatment.

Moreover, two studies about acceptance of voluntary HCT were conducted in unmarried young adults (Jiraphongsa et al., 2002) and women (Liu et al., 2003) in Chiang Mai. In the first study, a cluster randomized trial was used to assess the effects of an active group intervention in promoting utilization of voluntary HCT. Villagers from 40 clusters were sampled to represent the premarital age population and assigned into intervention and comparison groups. The intervention was designed to enhance risk perception and increase HIV knowledge and testing. Interviews were conducted before and after the intervention. At baseline, 23% of 398 participants had been tested for HIV at least once and 90% reported testing positive. Most participants perceived that they had no chance of being infected with HIV. Among the intervention group, 71% participated in the intervention activities. The risk ratio of HCT acceptance among the intervention group was 2.92, but the risk difference was only 8.11%. Factors associated with HIV-TC acceptance were previous sexually transmitted disease, previous marriage, intention to get tested and having participated in AIDS-related activities (Jiraphongsa et al., 2002). This study was able to reveal that young adults who perceived risk and had more knowledge might be tested. However, we do not know what youth want to get from VCT services that can increase access.

In another study about rapid finger-stick HIV testing in women in northern Thailand, the researcher found that 56% preferred specimen collection by finger-stick testing, 80% preferred immediate rather than delayed test results, 79% preferred the

rapid test method to typical testing methods, and 97% were satisfied with the test method used (Liu et al., 2003). Although the results from this study demonstrate the utility and acceptability of the rapid finger-stick test for the HIV antibody among women in northern Thailand, it cannot indicate whether or not this method meets the needs of youth.

Furthermore, a study about the personal histories of tested persons in Chiang Mai among 825 IDUs who received HIV testing found that 36% reported a prior HIV test. Factors associated with prior HIV testing in multiple logistic regression analysis included higher education and having >1 lifetime sex partner. Needle sharing was not associated with prior HIV testing. Of the 298 men with prior testing, 80% reported a negative result on their last prior HIV test, 28% of which tested positive in this study, thereby leading to an estimated incidence rate of 10.2 per 100 persons/year. Fifty-nine percent of the IDUs who reported a prior HIV test stated that they had not received pre- and/or posttest counseling. HIV incidence among IDUs remains high, despite VCT (Kawichai et al., 2006).

In another study conducted among 2251 adults, aged 19-35 years, in northern Thailand, participants were interviewed about their HIV testing history and risk behavior. Overall, 47% of the participants had previously been tested, 64% of whom were tested at state clinics. Of those tested at private clinics, 50% reported not receiving pre- and post-test counseling compared to 15% among those tested in state clinics. Ten percent of those tested had not received their test results. Among those who had never been previously tested for HIV, 66% believed they were not at risk, although 1.5% (2.7% among men) actually was infected with HIV. Although VCT is widely available and utilized by the population of northern Thailand, substantial numbers of HIV infected persons have not been tested for HIV and among those tested many have not received comprehensive counseling (Kawichai et al., 2005). The knowledge from this study reflects that VCT services fail to meet UNAIDS/WHO standards and need to be improved, especially for specific groups, including youth at risk. However, these two studies also demonstrated the knowledge for some populations and were unable to specifically represent the youth.

One study about providers initiated HIV testing in community hospitals after VDO pre-counseling intervention and found that increase numbers of OPD

clients decide to receive HIV testing services. Although this study indicates that VDO pre-counseling can increase access to HIV testing in OPD clients, it cannot claim to do the same among the youth because they may not go to hospitals as OPD clients do and they do not like to wait for services, so there is less chance to provide them with this information.

After the effective ART treatment is accepted for saving PLWHA, the survey investigated perception on HIV Voluntary Counseling and Testing (VCT) and the Antiretroviral Treatment (ART) Program of the general Thai population was conducted to investigate the perceptions of the 3,208 Thai people investigated regarding HIV Voluntary Counseling and Testing (VCT) and the Antiretroviral Treatment (ART) program. The researcher found that half of the Thai population was aware of VCT; the number of subjects who had been tested for HIV/AIDS ranged from 9 to 17.8%. The proportion was lowest for northern Thai people (9.6%) and highest for northeastern Thai people (17.8%). The reasons for being tested differed from region to region. The most commonly mentioned reason was that women were pregnant. Among those who did not want to pay for VCT, 22.5-38.3% was willing to be tested if there was no fee. The common reason was that the health service facility was easy-to-access. The distance between residences and the selected health facilities ranged from 6 to 8 kilometers and the cost ranged from 20 to 30 baht. Thai people in general had a positive attitude towards VCT at hospitals. They trust public health facilities more than private health facilities as far as confidentially is concerned. However this study was also conducted in the general population, not in youth, so the knowledge is difficult to apply to Thai youth.

For the most part, previous studies about VCT in Thailand did not mention Thai youth. For the situation of the HIV epidemic in youth is the key concern for combating HIV/AIDS throughout the world, because the youth are at the center of the HIV epidemic. Studies of HCT services among youth are insufficient for proposing new policy and strategies.

Of the increasing risk behaviors for HIV infection in young people, especially among in-school youths, particularly from several BSS studies, 20% of Thai youth have engaged in sexual risk behaviors associated with HIV infection. Thailand has attempted to combat this situation by strengthening the youth leadership, providing

comprehensive sex education and youth-friendly health services. To achieve universal access to HIV prevention, treatment, care and support in 2010 and "getting to zero" in 2015 as declared by UNAIDS/WHO, HCT is widely accepted as the entry point. Scaling up access to HCT services, especially in vulnerable youth, has become a global effort including Thailand.

2.3.6 Situation of Access to HCT Services among Thai Youth

In the Declaration of Commitment on HIV/AIDS in 2001, 189 Member States committed themselves to regularly reporting on their progress in HIV response to the General Assembly. Member states are required to submit country progress reports to the UNAIDS secretariat every two years. The country progress indicators and data from 2004 to 2010 has been reported to UNAIDS and reveals that only 5% of member countries reported more than 20% of youth aged 15-24 years who received HIV testing and knew their results during the last 12 months. Most of these cases were in sub-Sahara African countries, such as Botswana, Kenya, Namibia and Rwanda (UNAIDS/WHO, 2010). In addition, most of the youth who received HIV testing were pregnant. Although, sub-Saharan Africa is where HIV prevalence is highest and many countries have been able to effectively scale up access to HIV testing among their people, most parts of sub-Saharan Africa is also where fewer than one in ten of PLWHA know their HIV status (Joseph & Fredrick, 2007). In developed countries, such as the U.S., approximately one-quarter of HIV infected individuals remain undiagnosed (Curt et al., 2005).

Thailand is similar to other parts across the world and only 3% of youth at risk (0.6% of Thailand's youth) has access to HIV testing and 15-20% were found infected, which means more than 80% of infected youth are not aware of their HIV status. Of those who test each year, approximately 25,000 young pregnant women have HIV testing to prevent mother-to-child transmission (PMTCT) policy with 27,000 young men who undertook military recruitment. Both are mandatory HIV testing. In 2008, the NHSO reported that 57,000 young people aged 15-24 years had been tested for HIV. This means that only 5,000 youth have HIV testing voluntarily (NHSO, 2008). In 2010, the United Nations General Assembly Special Session on HIV/AIDS (UNGASS) Thailand reported that access to HIV testing had decreased by

10-20% from the year 2008, especially among people younger than 25 years, except for pregnant women who are mandated to have HIV testing in compliance with PMTCT policy (Sirinirund et al., 2010).

One survey of perception on VCT of the 3,208 people in the general Thai populations showed that 31.2% had been tested, while more than 50% of the tested people had had compulsory HIV testing for PMTCT, job applications, life insurance policies and blood donations. Only 3.7% of Thai people have voluntary HIV testing (Sanchaisuriya et al., 2008). Furthermore, a behavioral surveillance survey among students in high school and vocational school in Bangkok only 2%, 3.5% and 9.2 % of Grade 8, Grade 11 and second-year vocational students were found to have been tested, respectively, while 8.2%, 13.5% and 29% of each group had sexual experience, respectively (Srivanichakorn et al., 2009).

2.4 Access to Health Care Services

To understand "access to HCT services among Thai youth, "access" and "access to health care" need to be defined. In general, "access" is defined as "capacity to enter" (Garner, 2003; Merriam-Webster Dictionary, 1998) and "way of approaching" (Abate, 1999). In the history of health policy, definitions of access to health care have been driven by health care system concerns. The definitions have evolved from having insurance coverage, to the number of providers, to efficiency of health care services (Gold, 1998). Later, access became the degree of "fit" between the clients and the system (Penchansky & Thomas, 1981).

2.4.1 Concept of Access and Access to Health Care

Access to health care, therefore, is defined in different ways, e.g. a consumer's ability or willingness to use the health care system (Penchansky& Thomas, 1981), capability to obtain health care that includes available health care providers, services, transportation, admittance by facility, ability to meet financial obligations and insurance benefits (Slee, Slee, & Schmidt,1996), ability to use health services when and where they are needed (Andersen, 1995) and power to command health service resources (Cromely & McLafferty, 2002).

According a concept analysis of personal access to health care by Tommie L. Norris and Margaret Aiken (2006), access was categorized into four dimensions: Availability (Castro, 1994; Penchansky & Thomas, 1981), Eligibility (Garrett, 1995; Gordon, 1995; Horneretal. 1994), Amenability (Penchansky & Thomas, 1981) and Compatibility (Juarbe, 1995; Morrison et al., 1995; USDHHS, 1997).

2.4.1.1 Availability: Availability has two dimensions, including; geographic proximity (the source of health care must be safe and reasonable for the consumer to walk from the home or workplace or reachable by public transportation) and personal convenience (the office hours, house calls, telephone consultation and waiting times).

2.4.1.2 Eligibility is the economic qualifications of the consumer relative to the eligibility criteria of the service agency, such as income and insurance coverage. Although existing HIV testing services in Thailand are contained by the national scheme that anyone can be tested twice without payment per year, current testing does not support youth under 18 years old. If adolescents want to be tested, they need require parental consent. If they want to be tested without a consent form, they have to pay for testing.

2.4.1.3 Amenability is the willingness of the consumer to utilize available health care services that consist of knowledge of health status and needs and health care system available.

2.4.1.4 Compatibility is cultural competence and culturally sensitive care.

According these 4 dimensions of access, “access to HCT service among Thai youth’ comprises youth needs and eligibility with willingness to use and actual use of HCT services. Moreover, compatible HCT services should be available for the youth.

2.4.2 Frameworks of Access to Health Care

Access to health care has been interested in improving the health service system. Several frameworks for access have been developed over the past 40 years. Three frameworks of access to health care will be presented: the behavioral model of

health services use, Penchansky's framework and the Institute of Medicine Model of access monitoring.

2.4.2.1 The Behavioral Model of Health Services Use was initiated by Andersen in the 1960s to determine why families use health services and to inform about health policy (Andersen, 1995). Several revisions have been made in response to emerging issues in health policy (Andersen & Davidson, 2007). The Behavioral Model has been used by several studies worldwide to guide health policy decisions and the policy decisions based on this model (Phillips, Morrison, Andersen, & Aday, 1998) have focused more on increasing utilization of health services to predict health service use based primarily on individual level characteristics (Andersen et al., 2000; Jang et al., 2010; Smith, 2003).

2.4.2.2 Developed in the 1980s to define and measure access, Penchansky's Framework views access as specific areas of "fit" between the client and the health care system (Penchansky& Thomas, 1981). Penchansky's model defines five aspects of access: availability, accessibility, accommodation, affordability, and acceptability (Ricketts & Goldsmith, 2005). Each aspect of access is measured by surveying the user of health care and the health care system, which includes the health care organization and the providers. One of the strengths of Penchansky's model is that it identifies the effects of health policies on specific populations (Karikari-Martin, 2010).

2.4.2.3 The Institute of Medicine Model of Access Monitoring (IOM) has also been used to guide policy studies (Institute of Medicine, 1993). The IOM model was developed in the 1990s to provide a structure that ties timely personal receipt of care to achievement of optimal health outcomes (Institute of Medicine, 1993). The IOM model defines the aspect "barriers to access" as personal, structural and financial factors that may prevent use of services. "Use of services" is defined using utilization rates of provider visits and procedures. "Mediators" relates to the appropriateness of the care provided, the efficacy of the treatment received, the quality of providers and patient adherence (Institute of Medicine, 1993). The strength of the IOM model is that it identifies barriers and/or mediators that influence the outcome and these may be used when formulating health policy (Karikari-Martin, 2010).

Among the three frameworks of access presented, the Behavioral Model was found to be most frequently used to provide explanatory/predictive factors associated with utilization of services. Penchansky's model was useful when subjective experiences with health care access were needed to inform policy makers. The IOM model is more useful for monitoring quality of health care services provided.

According to the literature reviewed, "access to HCT services is needed among youth along with eligibility, willingness to use and actual use of HCT services which are compatible and available for them. Studies about access to health care services, therefore, differ in terms of the outcomes of each study. To measure access, availability and compatibility of services are counted in the health care service characteristics component as well as and willingness to use services if eligibility for services is counted in the client characteristics component leading to use of health care service behavior.

The interested phenomenon of this study is willingness to use HCT services among in-school youth in Thailand that is predicted by characters of youth and expected character of youth-friendly HCT service. Based on the Behavioral Model of Health Services by Andersen, the factors influencing willingness to use HCT are reviewed.

2.5. Factors influencing use and intention to use HCT services among Thai youth

The above literature indicates that attempts have been made to find strategies to raise access to HCT services among youth worldwide. Each strategy focuses on appropriate responses to specific youth characteristics. Therefore, the evidence reviewed about factors influencing use and intention to use HCT among youth includes HCT services and youth characteristics. Application of the Behavioral Model of Health Services Use developed by Andersen is relevant. The details of this model and the analysis of factors influencing willingness to use HCT services among youth is presented.

2.5.1 The Behavioral Model of Health Services Use: A framework of analysis

Andersen's Behavioral Model of Health Services Use is relevant and used as a framework for assessment of healthcare access, outcomes and quality (Graves, 2009). This model is considered applicable to this study. Hence, the section explores Andersen's the Behavioral Model of Health Services Use and analyzes the hindrances and advantages of access to HIV testing in youth based on his model (Andersen, 1995; Graves, 2009).

Andersen initiated his framework in the 1960s and revised four times in the 1970s, 1980s, 1995 and 2006. The major aim of this model was to study equity access to health care services among minorities in America. This model covers to both clients and health care services leading to a deep understanding and coverage of all aspects of access to health care services: availability, amenability, eligibility and cultural compatibility.

The fourth edition of the model that was revised in 1995 consists of 4 parts including environment (health system), population characteristics, health behavior (service use) and outcomes of service use. The Behavioral Model of Health Services Use reflected the relationships among those 4 parts. In the revised "Behavioral Model of Health Services Use", multiple influences on health service use and subsequently on health status are included. Environmental factors indirectly influence health behavior through population characteristics. In addition, Andersen also included feedback loops showing that outcomes, in turn, affect subsequent population characteristics, the environment and health behaviors (Andersen, 1995). The Behavioral Model of Health Services Use is demonstrated in Figure 2.1

One of the aims of this study is to predict used and intention to use HCT services among in-school youth. They can be predicted by youth characteristics and environmental characteristic based on the behavioral model of health services use. Predisposing characteristics, enabling resources and the needs component are composed of youth characteristics. At the same time, the health care service system is stressed as the environment by Andersen. In Thailand, most in-school youth (97%) have not experience using HCT services while most HCT services are also unclear about how to organize youth-friendly services. The expected characteristics of

YFHCT services are applied. The research evidence of those factors will be presented as follows:

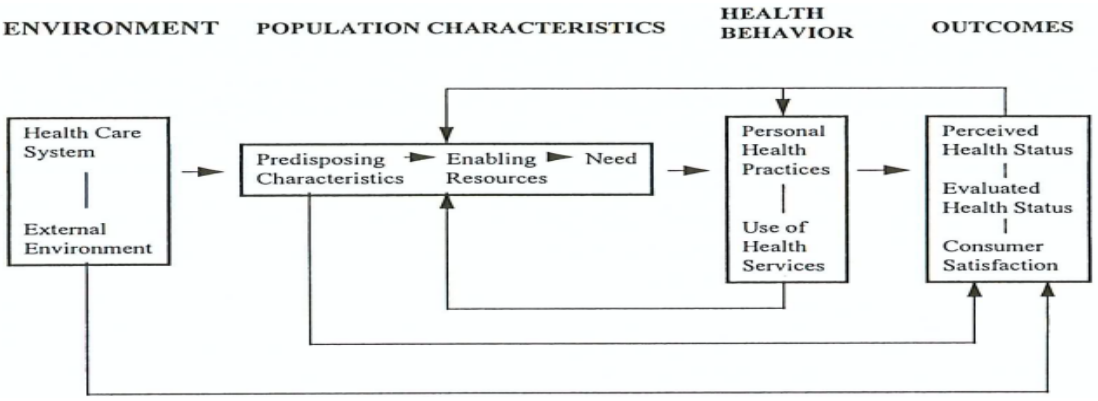

Figure 2.1 The Behavioral Model of Health Services Use (Andersen, 1995; Graves, 2009)

2.5.1.1 Predisposing characteristics:

Andersen stressed that the predisposing component of population characteristics is an individuals' propensity to use services. The literature review shows that gender (Sebudde & Nangendo, 2009), HIV/AIDS knowledge (lliyasu et al., 2006; Mabunda, 2006; Sebudde&Nangendo, 2009; Shin et al., 2007; Uzochukwua et al., 2011), attitude toward HIV testing (lliyasu et al., 2006; Shin et al., 2007; Vermeer et al., 2009), and perceived HIV stigma (Bwambale et al., 2008; Daniyam,et al., 2010; Kitara&Ecik, 2011; McCauley, 2004; Meiberg et al., 2008; Ransom et al., 2005; Uzochukwua et al., 2011) are the significant predisposing characteristics of youth.

2.5.1.1.1 Gender

Gender is indicated as a significant factor for HIV testing. In previous research evidence, female youth seem to be tested and need to get HIV testing more than males, especially in self-initiated HIV testing.

During the Adolescents Connected to Care, Evaluation, and Special Services (ACCESS) project, social marketing to promote HIV testing for adolescents in six cities of the US established that 60% of youth who were tested were females (Futterman et al., 2001). This finding is similar to the findings of a

study in Zimbabwe: among 756 youths who accessed HCT services, female youth were counted at 73.9% of the youth with self-initiated access to HCT (Chirawu et al., 2010).

In a qualitative study on gender, sexual orientation and adolescents in HIV testing among 59 HIV-infected adolescents from New York City, young women were tested during routine health care or self-initiated tests, and most were asymptomatic when they tested positive while young men were experiencing symptoms of illness when they tested positive (Siegel, Lekas, Olson, & VanDevanter, 2010). Thus, gender is considered to be associated with HIV testing in the early stages. Furthermore, Ugandan females aged over 18 years, reflected a need to test their blood for HIV in preparation to marry and have children (Sebudde & Nangendo, 2009).

In addition, in a study of social and psychological factors associated with willingness to test for HIV among young people in Botswana, a representative sample of 1,294 students from secondary schools and tertiary institutions showed that 56.8% of females and 47.6% of males were willing to test for HIV. A significant difference of gender among those who were willing and unwilling to test was revealed (Chi square = 10.9 and $P < .001$) (Fako, 2006, 2010).

2.5.1.1.2 HIV knowledge

Several studies have indicated that HIV knowledge is a major influencing factor in access to VCT.

A study of knowledge in 220 adults in Nigeria (40% were youth) found that HIV knowledge significantly predicted positive attitudes toward VCT (lliyasu et al., 2006) and was related to other studies revealing that youth who have HIV knowledgeneed to know their blood test results and intent toward HIV testing (Mabunda 2006; Sebudde & Nangendo, 2009; Shin et al., 2007).

The abovementioned is similar to a study of knowledge, attitudes and practices in voluntary HIV counseling and testing among 1,280 rural migrants in central China in which 528 youths aged between 15-24 years (41% of the samples) were recruited. Knowledge of HIV transmission was found to be a significant predictor of practices in VCT (Odds = 1.6, $P < .05$) (Zhang, Zhang, Gao, He, & Detels, 2011).

2.5.1.1.3 Attitudes toward HIV testing

According a study of attitudes in Nigerian youth conducted by Iliyasu and colleagues (2006), it was found that positive attitudes toward VCT led to willingness to have VCT (lliyasu et al., 2006). Furthermore, another study in Korea found that youth had negative attitudes that VCT is only for risk people. If they were not labeled as being at risk, they would not to go to be tested (Shin et al., 2007). Similar findings were revealed in a study of 760 first-year African black university students in Nigeria, South Africa, Uganda and Zimbabwe which found that attitudes towards HIV testing were a significant predictor for having HIV testing (Beta: 0.03, Wald: 11.91, Odds ratio: 0.97, $p = 0.001$) and predictor for intention to go for an HIV test (Beta: 0.24, t: 5.61, $p = 0.000$). Furthermore, having an HIV test and an intention to go for an HIV test were found to be associated with three HIV testing attitude subscales: 'general concerns', 'trust and support' and 'fears'. While 'confidentiality' and 'friends concerns' subscales were also weakly associated with the intention to go for an HIV test.

2.5.1.1.4 Perceived HIV/AIDS stigma

Stigma is deeply discrediting and lead individuals to occupy a tarnished and discredited identity and place in society. Stigma can have significant effects on health and disease transmission by delay in seeking care. Stigma surrounding HIV and AIDS has been shown to act as barrier to HIV prevention, treatment and care, including voluntary counseling and testing (VCT) (Fortenberry et al. 2002; Kalichman&Simbayi 2004; Kalichman et al. 2005; Lieber et al. 2006).

Several studies have indicated that stigmas and discrimination are the most vital obstacles hindering access to HCT among youth. Stigmas have occur from the time youths enter HCT clinics, because they believe HCT is only for persons at risk and walking in to use an HCT clinic indicates that they are people at risk (Ransom et al., 2005). Stigma during counseling, especially when the room for counseling is not private and the counselor does not accept youths because they are still young and studying (McCauley, 2004).

Until their HIV results were obtained, the stigma of positive results and discrimination overshadowed them because they were blamed by others (Bwambale et al., 2008). Many studies have revealed that some clients who

attended pre-counseling and testing did not return to receive their blood results. From depth-interviews, the participants who did know their blood results after testing indicated that they were afraid of knowing their blood results, and it was very hard to deal with their problems and their stigmas if they were HIV-positive (Vermeer et al., 2009). Moreover, a qualitative study among 72 university students in South Africa revealed that HIV/AIDS related stigma remains a very serious problem. The life-threatening characters of the disease are seen as the most important determinants of AIDS-related stigma and stigma is the most significant barrier to voluntary HCT in the country (Meiberg et al., 2008).

In addition, studies among medical students in Nigeria, Ugandan youth, and students in tertiary institutions in Enugu State Nigeria reflected the same result that fear to discover HIV positive status influences youth in obtaining HIV testing (Daniyam et al., 2010; Kitara&Ecik, 2011; Uzochukwua et al., 2011). This finding is concurrent with another study about factors related to HIV-testing behavior and interest in testing in Namibia. Stigma is significantly different among participants are who interested and not interested in HIV testing (odds=1.29, 95% CI= 1.14-1.46, P < .001) (Creela & Rimal, 2011).

2.5.1.2 Enabling resources

Enabling components mean resources that enhance youth use of HIV testing services. These include individual or family resources with both financial resources and knowledge about health care service and how to use them (Andersen, 1995). For this study, knowledge and awareness of HCT services and willingness to pay for HCT are considered.

2.5.1.2.1 Knowledgeand awareness of HCT Services

In Andersen's model, awareness and knowledge about health care services are significant in the use of health care services (Andersen, 1995).

A study of the knowledge, awareness and willingness to pay for VCT among students in tertiary institutions in Enugu State Nigeria, 81% of 500 participants were reported to have not attended HIV testing. Moreover, most of the respondents (64%) had heard about VCT and acknowledged it

as a useful way of fighting HIV/AIDS, while more than half of them (33.6% of 64%) did not know where to obtain these services which was reflected as a major reason for not attending to HIV testing (Uzochukwua et al., 2011).

In addition, a study of factors related to HIV-testing behavior and interest in testing in 2,671 Namibian adults aged more than 15 years indicated that knowledge of places for obtaining HCT services between participants who were interested in HIV testing and not interested was significantly different (Odds 1.77 95% CI-1.36-2.31, P<.001) (Creela & Rimal, 2011).

2.5.1.2.2 Willingness to pay

Willingness to pay (WTP) is the maximum amount of income an individual is willing to give up in order ensuring that a proposed or good service is available. According to a study of willingness to pay for VCT among 500 undergraduate students of two tertiary institutions in Enugu Nigeria, it was found that approximately 50% of the respondents were willing to pay for VCT and the mean willingness to pay was $3.2. Out of those who were willing to pay, 46% were willing to pay $2.6, while 34% and 20% were willing to pay $3.4 and $4.3, respectively. Among those not willing to pay, 67.6% thought the testing should be free ($P < 0.05$). (Uzochukwua et al., 2011) Evidence among Thai people reflects that 22.5-38.3% of 1,681 persons who did not want to pay for VCT were willing to be tested if there was no fee (Sanchaisuriya et al., 2008).

2.5.1.3 Needs Component

As in Andersen's model, the needs component refers to a level of health status and how to perceive health status requiring the use of health care services. In this study, perceived risk of HIV infection is considered a needs component.

2.5.1.3.1 Perceived risk of HIV infection

Perceived individual risk is the major reason for seeking the HIV testing. Many previous studies in several regions have found that the risks youth perceive as factors influencing access to VCT services, including sex with commercial sex workers (Shin et al., 2007), sex without condoms or multiple sex partners over three months (Thomsen et al., 2006), men having sex with men (MSM) and premarital sex (Chou, Huffman, Fu, Smits, & Korthuis, 2005; Shin et al., 2007).

Moreover, a study among 84.9% of 1,012 adults in Guizhou Province, China, who were not tested for HIV gave the first reason for not being tested as 'no risk behaviors' (Ma et al., 2007). In addition, the study of factors related to HIV-testing behavior and interest in testing in 2,671Namibian adults age more than 15 years which indicated that perceived risk for HIV transmission among participants who were interested in HIV testing and not interested was different with statistical significance(Odds=1.20, 95% CI = 1.08-1.33 P<.01) (Creela & Rimal, 2011). The aforementioned confirm findings of a study among medical students in Tanzania which reflected that their perception on risk behaviors could be significant predictors of HCT intention (Vermeer et al., 2009).

2.5.2 Expected characteristics of YFHCT services

While the characteristics of the health service system should be measured in terms of existing policy, structure and resources of health care delivery suggested by Andersen, this method does not seem to be sound for this study which will be conducted in Thailand where YFHCT service are not available throughout the country and most research participants have never learned about HCT service use. The expected characteristics of YFHCT services, therefore, are derived from the WHO guidelines for quality assessment of health services for adolescent/young clients. There are 5 characteristics included; equitable, accessible, acceptable, appropriate, and effective of services. The policies, structures and resources of YFHCT services that are expected by youth, however, are also embedded in those characteristics. Those 5 characteristics are applied to measure the HCT services with youth-friendly expectations influencing the use of HCT services for this study.

The research evidence has reflected that inequitable services are a significant barrier to service use. Equitable is reflected when all adolescents/youths, not just certain groups, are able to obtain the HCT service they need (WHO, 2009). Youths who want to test for HIV do not want to tell their parents about their risks (Horizons, 2001). To scale up HCT service use among the youth, many countries have given youths a chance to obtain HCT without consent from parents (Horizons, 2001; Thomsen, et al., 2006). Unfortunately, Thai youths under 18 years of age have been

not allowed to obtain HCT without parental consent as reported in Analysis of Policy Responses to AIDS in Thailand: Civil Perspectives (Suwanphatthana, 2010).

Accessible HCT services for youth is reflected in several characteristics such as a special clinic in the evenings and on weekend as required for Sri Lanka youth (Agampodi et al., 2008) while a warm reception from HCT services and friendly services are significant expectations among youth (Finger & Fischer, 2007; MacPhail et al., 2008; Mathews et al., 2009). In addition, HCT services near their residences and free of service fees are needed by youth in Jordan (Khalaf et al., 2010).

HCT services should be provided in ways that meet the expectations of adolescent clients for acceptable as recommended by the WHO. Young people will prefer to obtain HIV testing services if they are acceptable (Chirawu et al., 2010). Research among Ugandan men has shown that confidentiality is a significant predictor of VCT service use (Bwambale et al., 2008). In a focus group qualitative study, inadequate privacy and confidentiality was found to be the major barrier to reproductive health service use which was reflected by Sri Lankan youth (Agampodi et al., 2008) as well as in focus group discussion among 60 Jordanian youths age 12–18 years where it was indicated that youths expect friendly services to be acceptable, e.g. understanding, trustworthy, respectful, compassionate, friendly, short waiting time, appealing attraction and clean environment (Khalaf et al., 2010). Other studies have also indicated the process of specific services in significantly influencing factors, such as providing the information through media, internet and radio (McCauley et al., 2004; Sebudde&Nangendo, 2009), providing telephone counseling (Futterman et al., 2001) and having a website about young people's health (Khalaf et al., 2010).

The Appropriate of health services provided should require a health care package to fulfill the needs of all adolescents either at the point of health service delivery or through referral linkages. Lack of suitable adolescent services and mistrust of counseling quality have been reflected as barriers to accessing VCT by 240 youth aged between 12-24 years (MacPhail et al., 2008). In addition, expertise in specific HIV counseling and testing is significant because youths need to go to test with confidentiality in counseling and testing results (Mathews et al., 2009; Thomsen et al., 2006).

Effective of health care services ensures that health-care providers have the required competencies to work with adolescents and provide them with the required HCT services. Evidence from focus group discussion among Jordanian youth has indicated that experienced, specialized, knowledgeable experts on youth needs and problems need the required equipment, supplies, and basic services in order to deliver what is required in youth-friendly services (Khalaf et al., 2010).

2.6 Conclusion

To summarize the literature review, numerous youths throughout the world, including Thai youths, are at the center of HIV transmission; however a small number of them are aware their HIV status. To deal with this troublesome situation, HCT is a significant entry point to close the gap between HIV prevention and treatment. Although access to HCT could be beneficial to youth and society in order to reduce new cases of HIV infection via reduced risk behavior and early access to ART. Furthermore, reduced AIDS-related morbidity and mortality will lead to economic gains, but scaling up HCT among youth remains challenging for the health system. UNAIDS/WHO's policy, therefore, ensures HIV testing services for youth should be specific and sensitive to their needs.

Studies in several countries have established HCT services to raise access to HIV testing among their youth. Furthermore, VCT and routine PICT have been considered. The evaluation of each country, however, reveals that the successes of each strategy are dependent on the sensitivity of services to the needs and culture of youth. Therefore, youth-friendly service strategy has been applied. The WHO guidelines for quality assessment of health services for adolescent/young clients recommends that youth-friendly, services have the following 5 characteristics including equitability, accessibility, acceptability, suitability and effectiveness. This guideline has been selected to explore the expectations of the characteristics of YFHCT services among Thai youth.

Focusing on access to health care services, access to HCT among youth is defined as the eligibility and intention of youth to obtain HCT services. In this study, the Behavioral Model of Health Services Use initiated by Andersen is applied. The

youth characteristics composed of predisposing characteristics, enabling resources and the needs component are analyzed as factors influencing used and intention to use HCT services.

In Thailand, although VCT services have been available in more than 1,000 public hospitals around the country as “anonymous clinics” for twenty years, Thailand’s health system has not developed a specific HIV testing service for the youth, except for the “Love Care Clinic” which has been provided by PATH since 2008. Furthermore, most studies about HIV testing in Thailand focus on MARPs and pregnancy. There is a limited amount of research in Thailand that examines the characteristics of HIV testing service systems for Thai youth. Undoubtedly, Thailand’s health system does not have clear strategies or arrangement for facilitating access to HIV testing for Thai youth.

Therefore, examining those factors affecting used and intention to use HCT services among Thai youth is the most critical knowledge to be applied in finding strategies to scaling up HCT service use among Thai youth. Moreover, the expected characteristics of YFHCT services are able to guide the arrangement of youth-specific services which will be an entry point to achieving the goal of “Getting to Zero” on new cases of HIV infection, HIV/AIDS-related deaths and stigma.