FACTORS AFECTING CLIENTS' SATISFACTION WITH MOBILE COUNSELING AND TESTING SERVICE IN QUAN HOA AND MUONG LAT DISTRICT, VIETNAM

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Thesis
entitled

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Nguyen Thi Giang

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FACTORS AFFECTING CLIENTS' SATISFACTION WITH MOBILE COUNSELING AND TESTING SERIVICE IN QUAN HOA AND MUONG LAT DISTRICT, VIETNAM

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ABSTRACT

Mobile HIV counseling and testing (MHCT) plays an essential role in the response to the HIV/AIDS epidemic nowadays, particularly in mountainous and remote areas of Vietnam. However, MHCT services are still relatively new and in the process of being perfected and expanded to meet the growing epidemic amongst the high-risk and "hard to reach" subjects located in the high and distant mountains. This study examines the relationship between health service factors and clients' satisfaction with the mobile HIV counseling and testing service in Quan Hoa and Muong Lat districts, Thanh Hoa province. A sample of 119 participants (51 male, 68 female) was targeted to participate in this survey through the completion of self-administered questionnaires. Female clients show a higher satisfaction. Most clients acknowledged the quality of the mobile service at acceptable and satisfied levels. Moreover, the skill levels, attitude of staff, confidentiality, and consulting information are very important to clients' satisfaction. The findings suggest that managers need to maintain standards of health service quality to satisfy clients' expectations. In addition, the agency needs to conduct refresher courses to enhance the consulting skills of the counselors, and as a result, MHCT in the mountainous settings is likely to be acceptable in Vietnam.

KEY WORDS: HCT/MOBILE HCT/ HIV/AIDS/ CLIENTS' SATISFACTION/

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LIST OF ABBREVIATIONS AND TERMINOLOGY

VAAC	Vietnam Administration of AIDS Control
AIDS	Acquired Immune Deficiency Syndrome
HCT	HIV Counseling and Testing
MHCT	Mobile HIV Counseling and Testing
WB	World Bank
MSIVN	International Marie Stopes in Vietnam
HIV	Human Immunodeficiency Virus
WHO	World Health Organization
CITC	Client-initiated HIV Testing and Counseling
PITC	Provider-initiated HIV Testing and Counseling
MARP	Most at Risk Population
MOH	Ministry of Health
MSM	Men Who Have Sex with Men
MOHSS	Ministry Of Health and Social Services
LAC	The Legal Action Center
VHPPWB	Vietnam HIV/AIDS Prevention Project Funded by the World Bank & DFID
VHCTESG	Voluntary HIV-1 Counseling and Testing Efficacy Study Group

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CHAPTER I
INTRODUCTION

1.1 Problem statement

Vietnam has experienced more than 20 years to cope and deal with HIV/AIDS status. Cases of HIV infection and AIDS deaths have been detected in all 63 provinces/cities in Vietnam. According to report of Ministry of Health, as of 31th of May 2013, there are 213,413 people living with HIV, of which 63,373 AIDS patients and about 65,133 people who died of AIDS. The sexually transmitted infections accounted for the highest percentage (45.3%), followed by injecting drug infections (41.7%). The chart shows the percentage of people infected with HIV detected by sexually transmission is growing, and is decreasing by injecting drug users. Cases of HIV infection are concentrated in the 20-39 age groups and accounted for 78.6% of people infected with HIV (VAAC 2013).

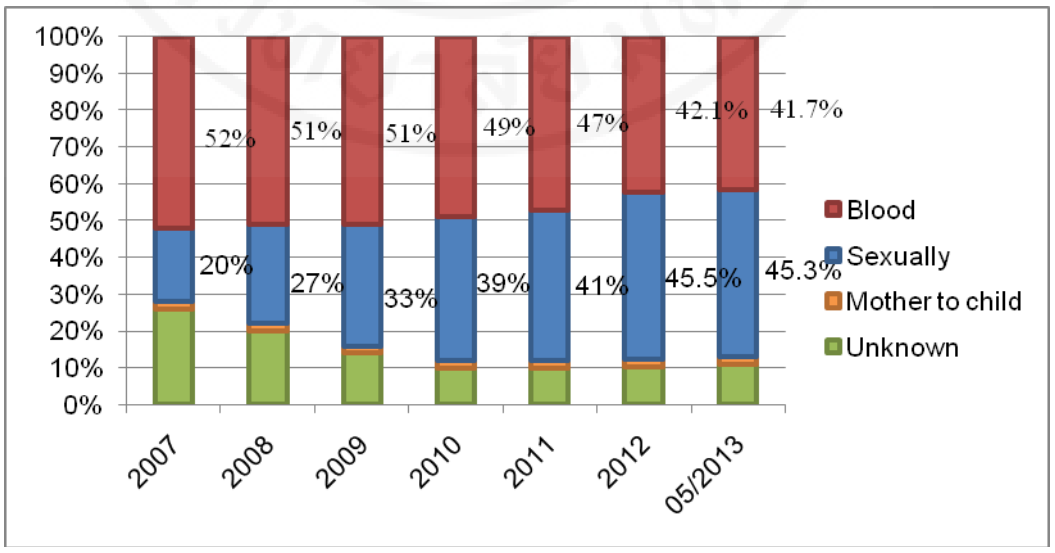

Figure 1.1 Distribution of the percentage of people infected with HIV by the way of transmission through the year

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For the HIV/AIDS prevention program to be more effective, in recent years, the Ministry of Health in collaboration with the other departments have concerned many programs and activities including media communication programs, behavior change education, harm reduction interventions to prevent HIV transmission (free needles, condoms distribution); care and treatment of HIV/AIDS patients, prevention of mother-to-child transmission, management of sexually transmitted infections (STIs), tuberculosis prevention for people living with HIV, and blood safety.

HIV counseling and testing (HCT) is one of the basic HIV prevention activities. HCT focuses on counseling and encouraging individual behavior change, community education, encouraging individuals tested for HIV. Moreover, HCT is also the starting point for HIV care and support services, such as preventing the transmission of HIV from mother to child, care and treatment services for sexually transmitted infectious diseases, and tuberculosis testing and treatment. Thus, HCT serves as the corner stone of HIV comprehensive prevention activities (VHPWB 2012).

HCT services have contributed to reducing HIV transmission behaviors in the community as well as helping people to disclose their HIV status and access to care, support and treatment services, as well as available psychological support services in the community over the world. Several studies carried out in Kenya, Rwanda and Thailand (Surinda Kawichai 2007; Irungu, Varkey et al. 2008; Menzies, Abang et al. 2009) also found that after accessing HIV counseling and testing services, there is significant increases in the use of condoms and reduced HIV/STIs risk behaviors.

HCT was first piloted in Vietnam in 2002, based on the consultation model of prevention, risk reduction and focused on high-risk population. Due to the importance of HCT activities in the HIV/AIDS prevention in Vietnam, on February 22, 2007, the Ministry of Health, issued the Guidelines of HIV counseling and testing including organization regulations, operation contents and standard of HCT service. Accordingly, all public health facilities and private agencies and organizations implementing HCT must comply with the guidelines (Nick, Joanna et al. 2001). Also

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since that time, the Ministry of Health in collaboration with national and international organizations, and set up HCT services on a large scale. Various projects involves include the World Bank project, Project LIFE-GAP, the Global Fund , International Marie Stopes in Vietnam (MSIVN) (MS 2012; VAAC 2012).

Increased reach and effectiveness of HIV counseling and testing is very important in controlling the HIV epidemic. Although the number of HIV positive people is higher in cities and urban areas, but the prevalence in the mountainous and remote areas is higher. According to the authorities as well as experts, in 2013 some provinces of Vietnam HIV epidemic could spread to communities where the prevalence rate rose from 0.3% in 2010 to 0.4% in 2013. Most of the new cases detected are concentrated in the mountainous and remote areas, where people have high risks, but lack HIV knowledge and access to HIV services. But most importantly they do not know their HIV status. Therefore mobile HCT services was initiated to promote programs on HIV/AIDS and help people in remote areas to have the opportunity to know about HIV and learn their HIV status, so they can take care to protect themselves, as well as the community.

The construction of the stand-alone HCT facilities requires huge resources for facilities, equipment and personnel. It is difficult to implement even in the short term. For the remote, mountainous areas with difficult access, the stand-alone HCT facility at a fixed point only attracted very few clients. Most clients live very close to HCT facilities and have good conditions to continue easy access. To increase access to HCT services in the community, particularly ethnic minorities in the remote areas where travel is difficult, such as mountainous area, the project on HIV/AIDS in Vietnam carried out a pilot model about mobile HCT in ThanhHoa province in March 2009.

Mobile HIV Counseling and Testing Model (MHCT) was implemented with the desire to "increase access to HCT services of high risk groups and communities. The model aims to improve HCT model to be more suitable for the target population, which include ethnic minorities in the mountainous regions and remote areas. These are client groups with high risk and are hard to reach "(VHPWB 2012).

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1.2 Problem justification

According to Vietnam Administration of AIDS Control (VAAC), HIV prevalence is still high in ethnic minority areas and country border. Notably, the age of people infected with HIV tends to be older and increases in mountainous areas. Even though the implementation of best prevention for many years has decreased the rate of HIV/AIDS markedly, HIV infection is complicated and is at risk to reemerge if there is no good and suitable preventive measure.

It is worried that the high HIV prevalence is warning in some areas of ethnic minorities of the border provinces such as Son La 4.4%, Nghe An 3.25% (VCCA 2012). While many new cases are being detected in mountainous and remote areas, the majority of the population is still unaware of their HIV status.

Thanh Hoa topography is quite diverse, lower from West to East, divided in to 3 distinct areas. Mountainous and midland regions account for 8,000 km^2 that associated with North West mountain system and the Truong Son Mountain in the South. Thanh Hoa ranks the fifth in the 63 provinces of Vietnam in terms of area and a population of 3.405 million ranked the third in the country. With the complex terrain and the huge coverage of hills, the access to health services of the people faces many difficulties. They live far from the center and walking difficulties would be a barrier to accessing services. Therefore, the conducting and development of mobile HCT model is very suitable and necessary in this area.

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Figure 1.2: Map of Thanh Hoa province, Vietnam

According to the World Health Organization (WHO), HIV prevalence in the community of more than 1% can be categorized as HIV community transmission outbreak, the risk of HIV transmission in this region tends to be very high (WHO 2013). Thus, to cope with the complicated situation, research of MHCT in Thanh Hoa Province at the present time is the most appropriate.

Clients' satisfaction related to health services is predictive of clients' decisions regarding choice of health care models, and adherence with regimens. The principal model about satisfaction and perceptions of service quality focuses on whether the client's expectations are "confirmed" or "disconfirmed" by their perceptions of the service they have received (Nick, Joanna et al. 2001).If the desires

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of the user are met by the perception of the service they will be satisfied and will continue to use the service.

Clients' satisfaction is a topic of strong interest in the health care field. It is mounted with a series of health outcomes and in particular, it brings economic benefits, psychological and social utility (David, Ruth Ottman et al. 2003).

The procedures for conducting mobile HCT should be reviewed and adjusted regularly to improve the quality of services provided. To expand this service, a research in Egypt was conducted to determine clients' level of satisfaction with the objectives identification of the clients' socio-economic characteristic using the service, determination of their level of satisfaction with the mobile HCT and findings of weakness and strengths in the service and suitable form of the service (Kabbash, Hassan et al. 2010). Kabbash et al found that more than 90% clients were satisfied with HIV consulting service and male and higher education level clients were satisfied than female and lower education level clients. Clients were also satisfied with materials in the HCT areas and different steps of the counseling service.

Aiming to enhance health service quality in order to attract clients using the mobile HCT and to reduce HIV rate in mountainous and remote areas, there is a need to understand the factors affecting client's satisfaction with the operation of mobile HCT models that are being developed in Quan Hoa and Muong Lat districts, Thanh Hoa province. This research is conducted to evaluate the accessibility and acceptability of MHCT services of high-risk groups and communities to improve mobile HCT model to be more suitable for the target ethnic minorities in mountainous areas, remote areas, and high risk client and hard to reach groups. This research was carried out from the perspective of the clients' reviews.

1.3 Research questions

What are the factors affecting clients' satisfaction with mobile HIV counseling and testing service in Quan Hoa and Muong Lat districts, Thanh Hoa province in 2012?

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1.4 Research objectives

1.4.1 Ultimate objective

To provide recommendations to design appropriate MHCT models based on clients' perspectives in mountainous districts of Thanh Hoa province for policy – makers and program administrators in improving the quality of service and replicating this mobile HCT model in other districts and provinces.

1.4.2 Immediate objective

To examine the relationship between health service quality factors and clients' satisfaction with the mobile HIV counseling and testing service in Quan Hoa and Muong Lat districts, Thanh Hoa province, Vietnam.

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CHAPTER II
LITERATURE REVIEW

Although the client satisfaction with HCT has been recognized by many researchers, this chapter will focus on two major themes which emerge repeatedly through the literature review. These themes are: 1) the importance of HCT and 2) the factors affecting client satisfaction with MHCT including socio-economic factors and health service quality and other related factors from results/findings of previous studies.

2.1 Importance of HIV counseling and testing

2.1.1 HCT over the world

HIV Counseling and Testing is very important to prevent, detect and treat HIV infection over the world. The study conducted in developed and developing countries has found that HCT could limit high-risk sexual practices and might reduce rates of the sexually transmitted infections. Interactive counseling resulted in reduced overall STD rate of about 30% after 6 months and 20% after 12 months of follow-up (Kamb, Fishbein et al. 1998; VHCTESG 2000). Additionally, HCT is essential and becoming increasingly available in Vietnam and towards people with HIV/AIDS having access to HIV/AIDS care and treatment. By the end of 2006, in United states of America, an estimated 21% of people who infected with HIV do not know about their positive HIV status (by calculated using extended back-calculation methods) (Rhodes, Hall et al. 2010). The rate of HIV transmission from those who are aware of their HIV status was approximately 3.3 compared with a rate of approximately 11.4 of people who do not know they are infected with positive HIV (Holtgrave 2010). Moreover, with the high-quality care, an HIV-positive patient can live more than 39 years (Lohse, Hansen et al. 2007). This result approves the importance of routine HIV counseling

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and testing and early linkage to care and treatment for those who test with HIV positive (CDC 2009).

Mobile HCT is a perfect strategy for overcoming the practical barriers to access such prevention, care and treatment services and link clients to other related services. Mobile HCT means "the provision of HIV counseling and testing services by mobile teams from a van equipped with HIV-testing facilities" (Asingwire 2004; Morin, Khumalo-Sakutukwa et al. 2006)). The general principle of mobile HCT is to take HCT to subjects that are known to be 'hard-to-reach', such as internally displaced populations, sex workers, labors at their workplace and high risk population in mountainous and remote areas. Most mobile HCT services are provided in coordination with local health and other partners. For examples, in Kenya, Kenya HCT services accessed to over 75,500 clients per year during from May 2005 – April 2006, 65% of whom used mobile HCT service, often delivered in rural and mountainous sites where HCT staffs set up tents for a few days, returned from one to three months depending on actual command and situation of each site (Kristina, Nick et al. 1999).

2.1.2 HCT Model in Vietnam

Until now, there are 4 models of HCT implementing in Vietnam to provide the HIV counseling and testing.

(1) Client-initiated HIV Testing and Counseling (CITC) model to provide the services for general population and targeting most at risk groups such as female sex workers, people who injecting drug (PWID), men who have sex with men (MSM).

(2) Provider-initiated HIV Testing and Counseling (PITC) model that was developed in prenatal check-up facilities, hospitals, tuberculosis and dermatology test facilities to target pregnant women, tuberculosis patients and sexually transmitted infected people. In these facilities, "opt out" policy for HIV testing is performed.

(3) Mobile HIVs Counseling and Testing (MHCT) model to provide the services for migrant workers in industrial zones, export processing zones, mountainous and remote areas , restaurants, hotels, hot spots and gathering places of commercial sex workers, people who injecting drug and men who have sex with men (MSM).

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(4) HIV Counseling and Testing in isolated places such as detoxification centers, rehabilitation centers and social and labor education centers for commercial sex workers.

In this research we focus on the third model of MHCT which provides the services for high risk people in mountainous and remote areas. This mobile HCT approaches operated under stand-alone HCT centers as their base, and HCT staff from the stand-alone center moved to nearby rural and mountainous and remote sites to provide the mobile services. In addition to the national propagandas on mass media, mobile HCT approaches involved advance community mobilization with local agencies/departments to strongly overspread support for HCT in host communities. Community-site based mobile HCT, which used and based on existing community sites such as churches, empty schools, commune health clinics, and other community buildings to provide temporary HCT was presented in Kenya and Thailand around 2002 (Kristina, Nick et al. 1999; Surinda Kawichai, Celentano et al. 2007). To use this low-technology approach, HCT team had to rely on locally available basic methods of transportation (e.g. walking, bicycles or motorbike, renting a vehicle) to reach nearby rural, mountainous and remote communities. Testing supplies were collected and carried in bags and boxes, and self-designed posters include message of date and location about delivery of HCT services are distributed through the host community in advance.

Mobile HIV counseling and testing is as an effective alternative HIV counseling and testing model in a certain circumstance. The number of client accessing HCT services from established health facilities and stand-alone HCT institutions is somewhat limited due to the inadequacies of the transportation difficulties or worry about their presence at these locations might be seen by acquaintances, relatives, friends and even employees who knew them previously(Stanley, A et al. 2006). As a result, many people, including those living with HIV, have not sought HCT and are not aware of their HIV status (WHO, UNAIDS et al. 2007). This indicates a need for approaches that can increase access and overcome social barriers, such as mobile HIV counseling and testing services (Morin, Khumalo-Sakutukwa et al. 2006), routine offering of HIV counseling and testing (Weiser, Heisler et al. 2006; Creek, Ntumy et al. 2007).

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2.2 Factors affecting clients' satisfaction with MHCT

Some characteristics are associated with general clients' satisfaction; these include social economic status and general health service factors. Most-at-risk populations (MARPs) include a wide variety of individuals with unlike needs. Increasing the HIV testing and counseling service among MARPs requires unique strategies that consider cultural, social, economic, gender contexts and health service factors. MARPs meet intense stigma and discrimination, which makes people access to HIV services difficult (USAID 2013). As with all services, MHCT always puts clients at vital deciding factor in their mode of operation. To understand the difficulties and desires of clients in accessing essential services MHCT to identify factors affecting clients' satisfaction with MHCT as considered clients' characteristics as well as health service factors. It aims to improve the service which is considered as a welcome gateway for next HIV/AIDS prevention and treatment services.

2.2.1 Social economic factors

2.2.1.1 Gender

In the context of the widespread HIV/AIDS in global level, gender is a very important issue and deserves attention from the risk of HIV infection or spread, as well as sexually transmitted diseases and opportunistic infections; and the approach of the HIV/AIDS programs from prevention to care and treatment. And even the ability to respond to HIV status or affected by HIV. Although the integration of programs on HIV/AIDS and gender issues can pose a lot of challenges, the program's effectiveness will be improved and even promoted when the demand of gender really care taken into consideration. There are many difficulties and challenges that women face on the need for health, but in general, the issue of culture, customs and practices are barriers preventing women on accessing to health services in general and HIV/AIDS service in particular, including MHCT (Robert, Jenifar et al. 2009).

Especially, Vietnamese women are relatively good at health, education and gender equality. However, enduring cultural and social norms that existed from feudal society limit HIV prevention efforts, for example the expectation that women will remain virgins until wedding and taboos on mentioning sexuality issues with their partners, friends, colleagues, or even their husband (MS 2006).

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Women have to endure many obstacles in their life. These obstacles include the women's responsibility as both a mother and a wife such as care for their families and children, and also responsibility about finance problems in their family. For example, many women often do not have enough money and resources for transportation to and from medical facilities. In some cases, go to the clinic, or health facilities is the only time a woman has the right to go out alone and met the woman with social relationship (Robert, Jenifar et al. 2009).

In general, both men and women are affected by barriers to health care services, such as cost, time, location, distance from services and even planning health for themselves. The related- gender barriers may also affect the ability of access of HIV/AIDS prevention, care and treatment. For example, men tend to be more active and have free time outside of work in their offices to access to health services to check and monitor the status and care treatment of health. In contrast, women cannot have more free time after leaving their office, they also take the time to care for children and work at their home. Vehicles also restrict women's access to health services; they do not have means of personal transportation, and not enough money to cover costs for public transport services to the health test and health care. Especially in some areas with the typical characteristics of their culture, women cannot leave their house without a man in their families to go together (Buzza, Ono et al. 2011). Thus, simultaneously with the delivery of care and treatment services, the design and implementation of care and treatment programs should address issues of transportation, work hours and waiting time at the clinic in order to create more opportunities for women to participate in the health services.

If the birth of MHCT services will meet those barriers for women to access HIV counseling and testing services and it is not surprising that a study of the effectiveness of that MHCT showed a greater proportion of women and young clients was served by mobile HCT (15–24 years) (Elizabet, Miriam et al. 2006).And one more suspicious result found HIV positive results between men and women have large differences. More females visited the mobile centers (20.3%) than fixed ones (14.6%) (P= 0.028) (Kabbash, Hassan et al. 2010). The rate of HIV infections were significantly higher in female (40.0%) than in male (21.5%), driven mainly by the high rate of infection among women in Egypt. The approach that based

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on the community seems to attract individuals with significant risk behavior of HIV infection. For each individual's opinion, they always think that the cause of HIV infection comes from many different reasons. But overall, women they think their husbands or their partners have sex with other partners. Unlike women, men think that infection risk is caused by unsafe sexual behavior under the negative influence of alcohol. The findings of the potential risk of infection as well as the underlying cause that negatively influenced on the spread of HIV in the community suggest that HCT can contribute as a part of a HIV comprehensive program of prevention, care, and treatment, including information, knowledge about HIV/AIDS, stigma and discrimination, condom programs, HIV status and access to treatment programs (Stephen, Gertrude et al. 2006).

On the contrary, another research identified that with the different types of services, the age and gender distribution is also different, particularly with mobile testing services, more men and older individuals participate in the mobile services. MHCT services reach more different population than fixed HCT services. Clients of MHCT service often tends to be male and less to be HIV positive, and those infected with the disease were reported previously (Schaik, Kranzer et al. 2010).

Almost the findings showed several differences in gender affect on getting HIV counseling and testing service from clients (Megan, Michelle et al. 2011)

2.2.1.2 Age

In Egypt, a research of client's satisfaction in valuation of HIV voluntary counselling and testing services in Egypt reported that the clients' age using MHCT was older than fixed services.The age range of the majority of studied clients (77.0%) was 20–40 years. The mean age of clients in fixed centers [28.6 (SD 6.7) years] was significantly lower than that in the mobile ones [30.4 (SD 9.8) years] (P = 0.001) (Kabbash, Hassan et al. 2010), when comparing the age of two areas.

Previous studies in other countries showed that the most vulnerable group for HIV/AIDS infection is those aged 20–40 years, especially males who have risky behaviors (Pronyk and al 2002; Kosanovic and Kolaric 2006; Shin, Hang et al. 2007). In contrast, Qiang et al. in California found lower HIV

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testing rates among younger ages(Qiang 2006), while another study showed that age was not significantly associated with seeking HCT services (Marx 2001). The mean age of clients at fixed centers was significantly lower than that at mobile ones in our study. In Mali a study reported that younger people were more likely to come to mobile services than fixed ones (Moulaye and Annekatrin 2006).

2.2.1.3 Ethnicity

Despite significant advances in the provision of health services, ethnic minorities tend to receive lower health care than non-minorities and thus morbidity and mortality rate among ethnic minorities is more than non-minorities (Leonard 2006). A research about HCT in Nigeria with 987 samples included ethnic groups: Yoruba and Igbo. Although the number of Igbo respondents (55%) is much more than Igbo respondents, the result showed that the Yoruba clients likely use HCT service than the Igbo (Clifford, Sunday et al. 2013). There has been a significant finding about HCT service. Although the Luhya accounts the second highest HIV prevalence (12%) in Kenya, the Luhya ethnic group was less likely to access HCT service compared to other ethnic group such as Kikuyu ethnic group (Abdhalah, Nyovani et al. 2011).

2.2.1.4 Income

For the low-income population, it is very difficult to overcome barriers to access to health care services, even those with insurance coverage (Jennifer, DPhil et al. 2007). As a result, people who have low income normally meet difficulties in accessing health care services than people's higher income. Income also affects the way in which clients use HCT services: enroll or not enroll. For individuals who have full-time jobs with relatively high incomes they tend to enroll more than individuals with their primary source of income is from other support, meanwhile those who reported "hustling" as their primary source of income were least likely to enroll (Bartholow and Bradford 2005).A study about MHCT in Tanzania reported that female MVCT clients were more likely to get low household expenditures 10,000 TZS (OR 1.47 [1.04 to 2.05]), male clients seemed to have unstable income sources at high level (OR 1.99 [1.22 to 3.24 (Jan, Elizabeth et al. 2011).

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2.2.1.5 Marital status

Marital status has significant association with acceptance of HCT. Joseph found that individuals who were currently married (65.5%), and have no formal education (67%) accept HCT service at highest level. In the adjusted analysis, marital status are statistically significant with the increasing acceptance of HCT (adj. RR = 1.14; 95% CI, 1.08–1.20, for currently married; and adj. RR = 1.11; 95% CI, 1.04–1.18, for previously married, versus never married) (Matovu, Ronald et al. 2005). In the contrast, the acceptance of HCT service was lower among clients who were still single (55.4%). In survey of MHCT in Tanzania, the result was shown that female clients tended to be more divorced (10%) than male clients (6.3%) (Jan, Elizabeth et al. 2011).

2.2.1.6 Education

Education plays a vital role in accessing the HCT service among high risk population. For both female and male, the people with higher levels of education were more likely to have a recent test (Megan, Michelle et al. 2011). Surprisingly, we found that the rate of HCT acceptance among people with education was lower than people with no education. The percentage of HCT acceptance was more likely to be lower among those with primary education (adj. RR = 0.94; 95% CI, 0.90–0.99) and post-primary education (adj. RR = 0.91; 95% CI, 0.87–0.97) in compassion with those with no formal education (Matovu, Ronald et al. 2005).

A research about effectiveness of two types of HCT models in Egypt found that nearly two-thirds of the clients using HCT overall had secondary or university education (67.4%). However, in mobile centers, significantly more clients were illiterate (7.9%) or could just read and write(10.1%) compared with clients at fixed centers (2.9% and 2.3% respectively) ($P < 0.001$). The mean percentage satisfaction among clients with secondary and university education [91.1% (SD 8.2%)] was significantly higher than among illiterate or primary educated clients [89.2% (SD 9.0%)] ($P = 0.002$) (Kabbash, Hassan et al. 2010).

2.2.2 Health service quality

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The implementation of HCT services in communities meets many structural and social psychology barriers. Therefore, when these barriers are removed

including: cost, distance, the inconvenience and the challenge by providing free MHCT services in communities of rural, mountainous, and mountainous areas will bring more opportunities for local people to access these services. Reaching out to these clients in this particular region, and especially those who have fewer opportunities to access health care services such as HCT is an important strategy in the HIV/AIDS prevention (Surinda Kawichai, Celentano et al. 2007).

2.2.2.1 Waiting time

A qualitative study about the HIV counselling and testing service for African communities in London evaluates significantly about the factor of waiting time. Not only HCT but also other health care services in general, waiting time contribute a decision for clients using service or not. “My friends have told me that the reason that they haven’t gone for a test is because the test results takes too long. I think the advantage with this service is that in 15 minutes you know your results. I do not think it matters where the service is, people will use it.’’ Female participant (UK/Ghana), young people’s group (Prost, Sseruma et al. 2007).

When the waiting period is shortened including time for post-test consulting and test result, it is easy for clients being interested in using the service, the large proportion failing to return (Fylkesnes, Knuta et al. 1999). Especially; in addition to saving time for other work, with HIV-related services, waiting times will reduce the stress of knowing the result and stigma from other people when they stay there too long. Reducing clients’ potential anxiety has been the main purpose for this strategy. In Zimbabwe, 98.8% of 1099 clients accessing a same-day mobile HIV testing and counseling service chose to get their HIV test results on the same day from March 2002 to August 2003 (Stephen, Gertrude et al. 2006). Access to HCT is still affected by traditional HCT-related barriers, including long time of returning HIV test results (Joseph and Fredrick 2007).

2.2.2.2 Staff’s attitude and skills.

In relation to HCT interventions, health providers play a vital role to forward correct information for clients can reach an informed decision in opting for best alternatives. However it is not known to what extent the clients are satisfied with the context, process and perhaps the attitude and skills of MHCT service. Thus, it would be important to conduct this study so as to simulate the quality

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of the service as perceived and known by the clients (Steinbock, Agins et al. 2004). Accessing client perspective would also help to know whether the service is being delivered in accordance with their needs and areas that may need improvement.

It is not fair that in some health facilities, even without the informed consent of the clients, health workers disclose clients' HIV status in the public (Stanhope and Lancaster 2000). In addition, some of the clients said that they do not want to use the service as a counselor who is younger than themselves; this also increases the pressure on the availability of HCT service (MOHSS 2000).

At the client side, many both female and male clients prefer to be provided by health care providers who are the same gender by themselves; however, in many parts of the region, numbers of female care providers are less than male one. This inadvertently affects not only the quality of the consulting but also counselors' attitude by clients' fears and anxiety (Robert, Jenifar et al. 2009).

2.2.2.3 Convenience of the service

A survey in Chieng Mai – Thailand showed that the participants shared "I want to know my HIV sero-status" as their purpose to find HCT from the mobile service because the MHCT service gave them availability and convenience in accessing in the community (54.3%). In general; most of partners in the community and clients who participated in depth interviews including 31 village leaders, 54 testers, and 43 non-testers showed that their community attitude towards the mobile HCT services was viewed very positively among these three groups, especially among village leaders about convenience of service. The main reasons that testers tried to seek the HCT mobile were a high self-perceived risk of HIV, being unsure of their sexual partner's history profile, the free cost and the convenience of the mobile unit. The principal motivations for coming for mobile HCT included that it was free (54.5%) and easy to access in convenient locations (54.3%) (Surinda Kawichai, Celentano et al. 2007).

Easy access to MHCT services was considered as one of the important elements that should be covered by HCT service. "If this had been done in hospital, I never would have gone! Thank you for the services you have brought to the neighborhood," a man in the Democratic Republic of the Congo after using MHCT jumped up with relief and said (USAID 2011). A number of people suggested that,

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HCT services would be more perfect if HCT services was provided to home or near their home environment, which is established through home-based HCT services or through mobile HCT services rather than traditional HCT services (Surinda Kawichai, Celentano et al. 2007).

2.2.2.4 Consulting information

Providing enough and exact information in an understandable language to the clients is an important basis of HCT service. This remarkable point is that the counselors share with their clients the relevant information depending on each particular client's background. From the feedback of their clients, consultants can hold clients' characteristics and declare the correct information and understand the risk around their lives and especially the risk of infection. Both staff and clients of the HCT service are expected and set priorities about providing knowledge at the service base. The staff pointed out the need for more in-depth information related to HIV/AIDS, while clients were not very confident with the quality of information on HIV/AIDS that the staff provided to them(Mercy, Astrid Blystad et al. 2009). Information is a powerful and useful tool in preventing and caring of HIV/AIDS (Bruce 1990),and affects the consulting quality and process including knowledge of related fields, psychological factors, prevention methods, and risk assessment responsibilities (UNAIDS and WHO 2004). This problem poses a great challenge to meet the responsiveness tools including a consultative process and the information content that presented in widespread level.

2.2.2.5 Communication materials

Communication materials contribute a big part in the fight against the HIV/AIDS problems. The communication material as a means to help individuals better understand the issues involved through the statistics, photographs and a place for clients to perceive knowledge in each communication material. More importantly, in HCT centers communication materials help clients learn to grasp deeper knowledge about HIV and also a testament to the better interview.

More than half reported (59.8%) that they had learned new important information about HIV/AIDS from the video films or brochures at the HCT; at mobile centers, this percentage was 49.9% which was significantly lower than 76.7% at fixed centers ($P < 0.001$) (Kabbash, Hassan et al. 2010).

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2.2.2.6 Confidentiality

"Voluntary screening programs for HIV may be either confidential or anonymous: the process for each is unique" (Stanhope, 2000). This is a key element in HCT service. The confidentiality is considered by most counselors (97%) and clients (94%) as a very important factor in the HCT service. All counselors reported that the confidentiality of information from medical records and counseling sessions are highly observed, while 98% of clients report they are very satisfied with the confidentiality of the consultation at HCT centers. Clients are afraid of accessing to HCT services because they fear that the counselors and staff can have a previous relationship with them and the counselor might tell to their relatives, friends about their HIV status (Mercy, Astrid Blystad et al. 2009).

Discussant from a qualitative study (Prost, Sseruma et al. 2007) expressed that they feel comfortable to go to the HCT because no one knows them. As quoted ''I think going to the HCT clinic one can feel quite anonymous whereas if you go to a community-based service someone from the community might recognize you and there is always the danger that they might tell someone else,'' male participant (Sierra Leone), in young people' group.

Available stigma and discrimination of HIV/AIDS exists not only between people living with HIV/AIDS and community but also among individuals around the HCT center including testers and non-testers. They will find themselves stigmatization when they use the service. Research has shown that the numbers of clients are waiting to use the service, up to 7.7% are concerned that they might be recognized by someone; 9.6% said that they were afraid they might be seen as those infected with HIV, 7.7% thought that they would be discovered by someone and they will tell their friends, relatives and even their partner, and 5.4% thought that their spouses or partners will find their work to learn their HCT services. These important factors affected on access of HCT service at the mobile units from clients and of the non-testers respectively where 7.4, 12.8, 9.2, and 6.2% had the above mentioned concerns (Surinda Kawichai, Celentano et al. 2007). Thus keeping secret information to customers exists not only in public but also around the HCT centers.

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2.2.3 Other related studies

2.2.3.1 Risk behaviors of MHCT and the stand-alone services.

When comparing clients between two HIV consulting and testing services non-traditional outreach settings and traditional settings, we can see the difference in age, the risk of HIV infection, and even the rate of infection in the two models (DiFranceisco, Holtgrave et al. 1998; Ellen, Bonu et al. 2003). Customers using mobile services seems to be older and have higher risk in injecting themselves, have sex with a partner who tend to exchange sex for money or drugs compared with the stand-alone ones (29.6 vs. 28.3 years), (Ellen, Bonu et al. 2003). Risk behaviors of clients in the mobile services among MSM/TG who have sex in change for money of drug was 25% whereas only 19% in traditional clinics and the rate of female clients tested HIV in mobile van was higher than in traditional clinics (62% vs. 55% respectively; $p = 0.005$), (Ellen, Bonu et al. 2003).These data suggest that mobile services can provide an effective strategy to give a good opportunity to individuals at high risk for HIV who cannot reach to the stand-alone HCT services (Ellen, Bonu et al. 2003).

2.2.3.2 Barriers to HIV testing those who are living in mountainous, remote areas.

The rate of accessing HCT was correlated to social – economic factors including occupation, education, age, gender, transportation difficulties, distance, health status, ethnicity, and high-risk behaviors. From clients' perception by themselves, the main barriers to HIV testing listed as perceiving oneself as low risks, anxiety of non-confidentiality, and anxiety of stigma and discrimination that would result from accessing the HCT service (Ma, Feng et al. 2007).The main reasons leading to the low acceptance rates are stigma, self-stigma, discrimination and limited HIV/AIDS knowledge (Wu, Sun et al. 2006). Similarly, some studies in China also showed that only a very small percentage of rural migrants (2.3%–3.4%) had ever used HIV testing with few had been had testing at HCT clinics and only 3.8% conceived their own HIV infection risks(Zhang, Yao et al. 2009; Zhang, Zhang et al. 2012), none of which was specifically conducted and accessed to rural migrants, particularly those engaging in high risky behaviors. Such need is obvious for

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mountainous, remote and rural migrants, since some recent report suggest that mountainous, remote and rural people have played important roles in HIV transmission in Vietnam

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2.3 Conceptual framework

The conceptual framework for this study was developed to identify the factors influencing the satisfaction of clients about mobile HCT services in two mountainous districts in Thanh Hoa province. The framework needs to be used to organize the idea and guide for the finding of factors that influence the satisfaction of mobile HIV counseling and testing. The conceptual framework provides the comprehensive view about all the factors from individual or personal factors, health service quality factors that can influence the satisfaction and utilization of HCT services.

There are many obstacles and constraints for utilization of HCT services among at risk people in mountainous and remote areas. Adapted from some researches that also identify constraints and barriers of the accessibility of HCT services, I found some possible factors related to my objectives that can be grouped into 2 categories: clients' characteristics, and service quality factors. Based on the information from international literatures conducted to understand the barriers of utilization of HCT services, I developed the framework that can be used to guide my findings. Looking through all possible factors influencing the satisfaction of mobile HCT services; I grouped all factors into 2 categories in the framework. The constraints or factors that encourage clients to reach mobile HIV counseling and testing services may come from 2 main categories:

- Clients' characteristics: gender, ethnicity, income, marital status and education

- Health service factors: waiting time, staff's attitude and skills, communication materials, confidentiality, consulting information, and convenience of service.

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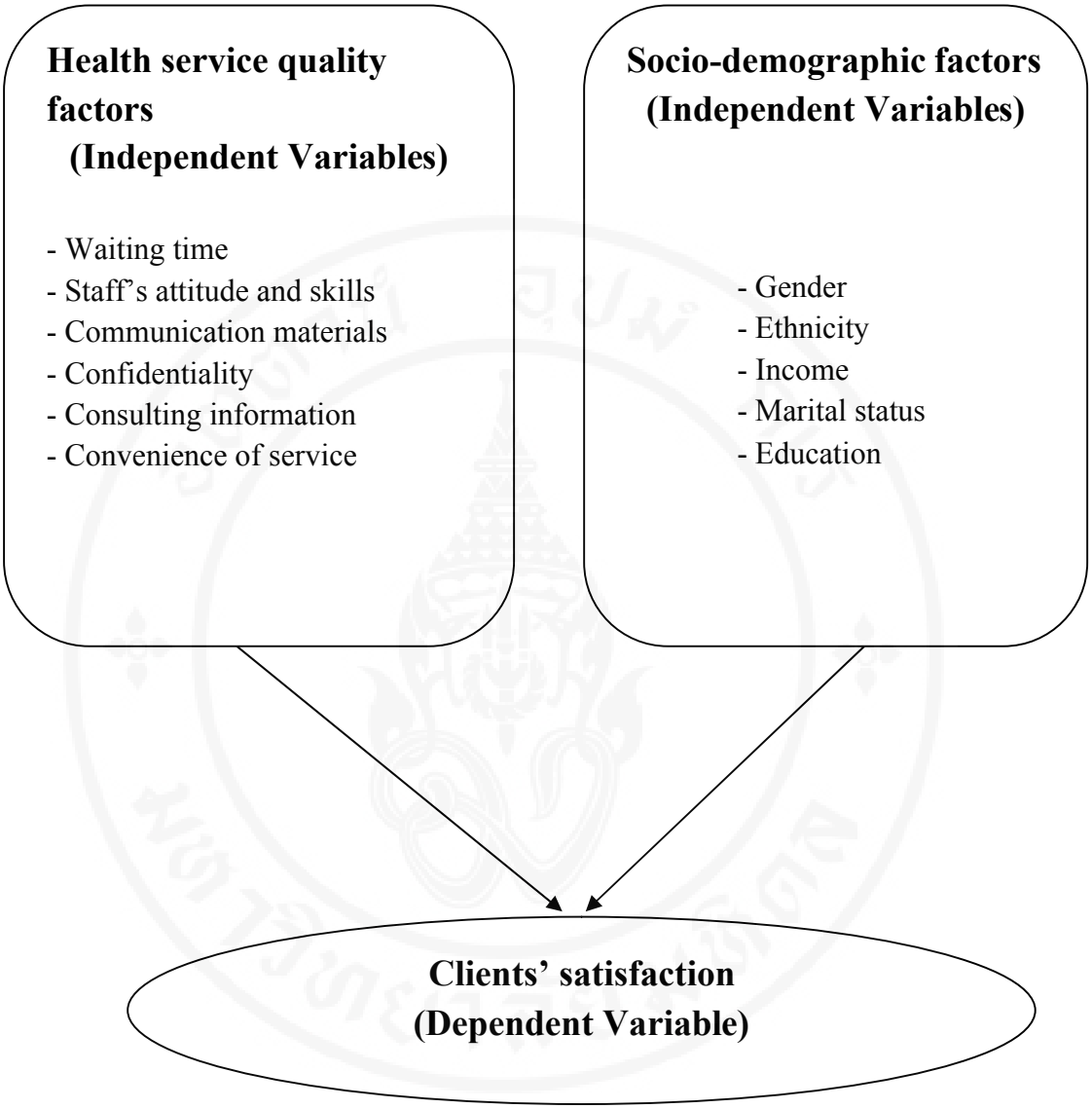

Figure 2.4: Conceptual Framework

2.4 Research hypothesis

The research hypothesis of this study is based on the regulation of HIV/AIDS laws relating to the confidentiality. This research hypothesizes that there is a relationship between confidentiality of service and clients' satisfaction.

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CHAPTER III
RESEARCH METHODOLOGY

This chapter describes detailed information related to research methodology. It includes information on source of data, study population and selection criteria, sample design and sample size. It also provides information on methods of data analysis, research ethics as well as limitations of the study.

3.1 Source of Data

The study uses secondary data from the cross sectional study on assessment of experimental model about mobile HCT in Quan Hoa and Muong Lat districts, Thanh Hoa province from 2009 to 2012 that was conducted in 2012 by Vietnam HIV/AIDS Prevention Project funded by the World Bank. The study used cross-sectional descriptive approach, using quantitative methods.

3.1.1 Study population and selection criteria

According to the research design of the original study namely "assessment of experimental model about mobile HCT in Quan Hoa and Muong Lat districts, Thanh Hoa province from 2009 to 2012), the study subjects were clients served by mobile HCT service and voluntarily participated in the interview of the research, accessed at HCT locations at the time of the study. The client's ethnicity is classified into 2 categories Thai and non-Thai (including Kinh, H'Mong, Tay, Muong).

3.1.2 Sample design and sample size

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Based on the original research design, the clients involved in the study were based on their voluntariness. The cross-sectional descriptive approach was used

for a total of 119 clients who lived in 2 districts: Quan Hoa and Muong Lat. The clients were interviewed face – to – face for answering the questionnaire.

3.1.3 Survey sites

According to the original research, the survey was conducted in two areas in Thanh Hoa province, including Quan Hoa and Muong Lat district.

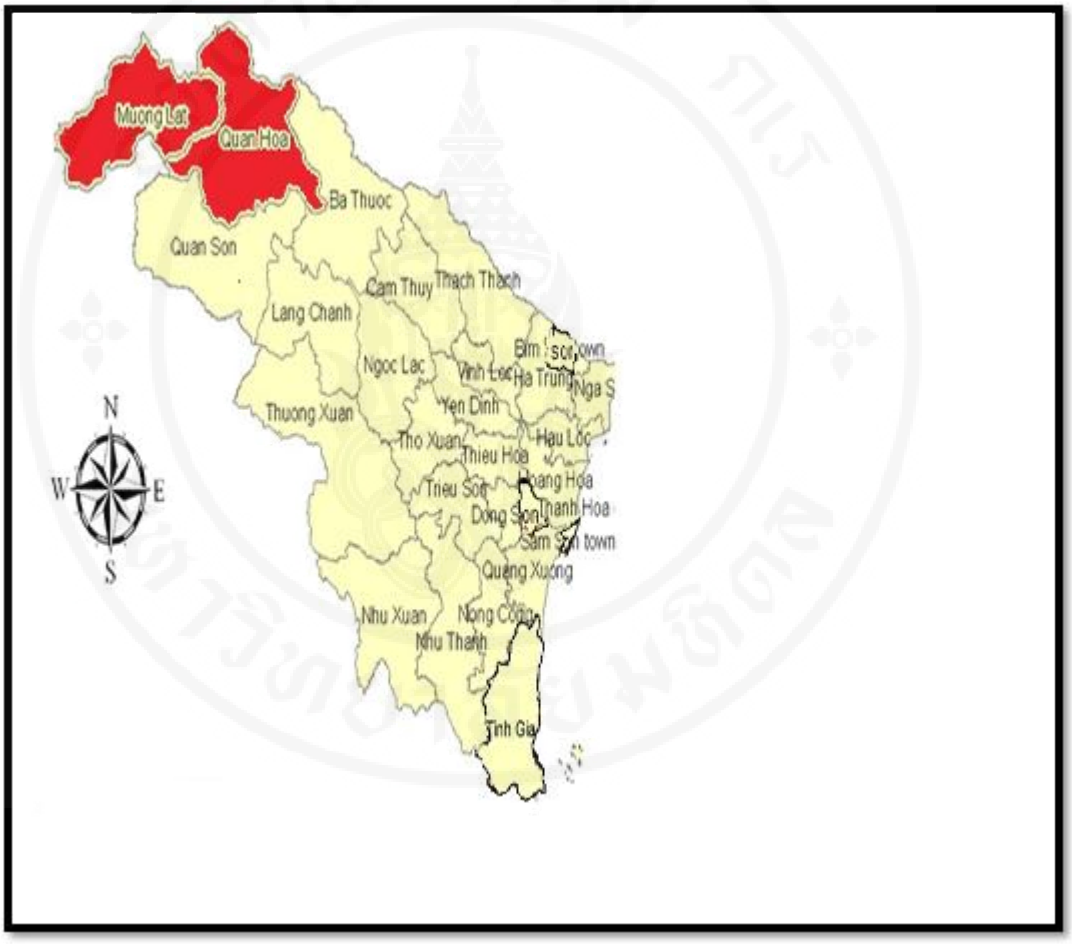

Figure 3.1 Map of survey sites in Thanh Hoa province, Vietnam

Quan Hoa and Muong Lat districts are located in the mountainous border of the Thanh Hoa province and share a border with People's Republic of Laos with an area of 808.65 km^2 of Muong Lat and 996.17 km^2 of Quan Hoa. Population density respectively is 37.5 people per km^2 in Muong Lat and 42.6 people per km^2. There are 7 ethnicities including Kinh, Muong, Thai, H'mong, Dao, Tho, and Kho Mu living and working in two districts. According to the Center for HIV/AIDS Prevention and

Control as the date of April 30, 2012; the number of people who infected with HIV was detected in 547/636 communes of 27/27 districts, cities with a total of 5,798 people living with HIV, the number of AIDS patients is 3,104 people, 958 people died (in which males accounted for 83.49%, and female for 16.51%). HIV situation is quite complicated in two districts mainly caused by people themselves lack of HIV information, lack of knowledge, stigma and discrimination and the epidemic interventions for HIV/AIDS has not provided a wide range, the propagation is confined to the campaign phase and concentrated in cities and towns. Thus providing mobile HCT services in these two mountainous districts is necessary and useful.

In addition, the two areas belong to project districts which received HIV prevention programs funded by the World Bank under the framework of Ministry of Health.

3.2 Operational definition of variables

3.2.1 Definition of the independent variables

In this study, for factors affecting on clients' satisfaction, I only focus on two main factors that are related to clients' satisfaction including socio-economic and health service quality factors.

3.2.1.1 Socio-economic factors

Age: in this study refers to age up to client's last birthday in years, classified into 3 categories: < 20 years old, 20 – 25 years old, and ≥ 26 years old.

Marital status: refers to the current marital status of clients, and is classified into 3 categories: single, married, and separated/widowed/divorced.

Educational level: Educational level in this study refers to the highest level of education that finished by clients, classified into 3 levels: illiteracy, junior education, and undergraduate.

Occupation: refer to current jobs of clients, and is classifies into 3 categories: unemployment, employment, and self-employment (working for themselves and not employed by a company).

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Ethnic group: Ethnicity in this study refers to the client's ethnicity, classified into 2 categories: Thai and non-Thai (including Kinh, H'Mong, Tay, Muong).

3.2.1.2 Health service quality factors

Waiting time: Refers to the time when clients have to wait to use counseling or testing service. The possible answers are classified into 2 categories: acceptable and satisfied.

Counseling skills: Refers to skills that counselors using to counsel to clients. Levels of clients' satisfaction with counseling skills are divided into 2 categories: Acceptable and satisfied.

Staff's attitude: Refers to staff's attitude toward clients when providing the service. In this study, clients' satisfaction is categorized into 2 levels: acceptable and satisfied level.

Communication materials: Refers to communication materials that clients accessed in the HCT areas. Clients' satisfaction is divided into categories: acceptable and satisfied.

Confidentiality: Refers to confidentiality of testing results that was kept by counselor and staff. Levels of clients' satisfaction with confidentiality are categorized into levels: Acceptable and satisfied.

Counseling information: Refers to information that clients got from the counselor during counseling time. Clients accessed at two levels: acceptable and satisfied.

Convenience of service: Refers to distance of HCT location and clients' comfort in accessing the service. Clients' satisfaction with convenience of service is divided into categories: acceptable and satisfied.

3.3.2 Definition of dependent variable

Clients' satisfaction: clients' overall satisfaction with MHCT, classified into 2 categories: acceptable and satisfied.

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3.3 Data Analysis

The quantitative data were statistically analyzed using SPSS statistical software. The mean and standard de-viation (SD) were used for quantitative variables including age variable. For categorical variables such as educational level, marital status and occupation, the number and percentage distribution were calculated. Binary logistic regression was used to examine the factors affecting clients' satisfaction. The level of significance was $P < 0.05$.

Table 3.1 Summary of variables and measurement

Variables	Categories	Measurement
Independent variables		
Age (year)	0 = < 20 1 = 20 - 25 2 = ≥26	Ordinal
Marital status	0 = Single 1 = Married 2 = Separated (widowed, divorced)	Nominal
Educational level	0 = Illiteracy 1 = Junior education 2 = Undergraduate	Ordinal
Ethnicity	0 = Thai 1 = Non-Thai (Kinh, Muong, H'Mong, Tay)	Nominal
Gender	0 = Male 1 = Female	Nominal
Occupation	0 = Unemployment 1 = Employment 2 = Self-employment	Nominal
Waiting time	0 = Acceptable 1 = Satisfied	Nominal
Counseling skills	0 = Acceptable 1= Satisfied	Nominal
Staff's attitude	0 = Acceptable 1 = Satisfied	Nominal
Communication materials	0 = Acceptable 1 = Satisfied	Nominal
Confidentiality	0 = Acceptable 1 = Satisfied	Nominal
Counseling information	0 = Acceptable 1 = Satisfied	Nominal

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Table 3.1 Summary of variables and measurement (cont.)

Variables	Categories	Measurement
Independent variables		
Clients' satisfaction (clients' overall satisfaction with MHCT)	0 = Acceptable 1 = Satisfied	Nominal

3.4 Research Ethics

This study has received the approval from Vietnam HIV/AIDS Prevention Project funded by the World Bank to use the data set of the survey mentioned above. In addition; the data usage was approved by IPSR Institutional Review Board. For the survey, participating in the survey was voluntary and anonymous. The objectives and purposes of the survey were informed by local health staff and interviewers before the survey was conducted. All information provided by the clients using the service was kept confidential. All technical group members including researchers and investigators who joined in the survey were trained by a short course and had to follow ethical standard in the whole process of the survey.

3.5 Research Limitations

Although the research has reached its aims, there were some unavoidable limitations. This research uses the secondary data so I have less control over how data was collected and there may be biases in the data that I do not know about. Moreover; because the original purpose of the questionnaire was to evaluate effectiveness of MHCT service, the contents of the questionnaire was not specific on clients' satisfaction. Furthermore; the research was conducted only on a small sample size that uses the service and response was based on voluntary basis. In addition; Interviewers' bias could affect the quality of research data and results. Therefore, to evaluate the satisfaction of clients the research should involve more participants to be representative sample. Moreover, the questionnaire was delivered after providing the service so the clients might not be honest in answering the questions.

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CHAPTER IV
RESULTS AND DISCUSSION

This chapter shows and discusses the findings. The data findings are structured and analyzed in relation to the framework established in Chapter 3. The chapter will be divided into 3 parts. The first part reports the results from the univariate analysis that describes general information of clients including: social-economic factors and health service quality factors of clients using mobile HCT in Quan Hoa and Muong Lat districts in Thanh Hoa province. The second part examines socio-economic factors and health service quality affecting with clients' satisfaction using binary logistic regression. The last section of this chapter discusses the findings.

4.1 Univariate analysis

4.1.1 Socio-economic factors

In this study, socio-economic factors refer to characteristics of clients who access the mobile HCT. The socio-economic factors include age, gender, education levels, occupation and marital status of clients. In the research, there are 119 clients but only one client did not answer the age. The results show that most of the clients using the service are not young. More than half of them (58.8%) are aged over 26 years old. The mean age of clients is 28.09 and ranges from 14 to 53 years old. The number of female clients (57.1%; N = 68) of mobile HCT account a higher rate than male clients (42.9%; N = 51). In the mountainous areas of the middle of Vietnam, Thai people account for the highest rate in the mountainous and remote areas in Thanh Hoa province. In this research, there are 119 clients accessed the MHCT service, in which 81.5% come from Thai ethnicity, the rest (Non-Thai) are Kinh, Muong, H'Mong and Tay. In general, we can see that the education level of clients using the mobile service in these areas is likely low; with many of them illiterate. About only 3.4% of clients have undergraduate degree, nearly 65.5% has junior education and 31.1 % are

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illiterate. Since the clients are mostly not young, the majority of the clients are married (77.3%). There are only 9.2% of clients who are single and 13.4% are separated. Looking at an overview of the marital status, we can give a statement that clients' marital life is relatively stable.

Table 4.1 Frequency and percentage distribution of clients' general characteristics

Characteristics	Frequency (N)	Percentage (%)
Age		
< 20	15	12.6
20 – 25	33	27.7
≥ 26	70	58.8
No –response	1	0.9
Total	119	100.0
Gender		
Male	51	42.9
Female	68	57.1
Total	**119**	**100.0**
Ethnicity		
Thai	97	81.5
Non-Thai	22	18.5
Total	**119**	**100.0**
Education Level		
Illiteracy	37	31.1
Junior education	78	65.5
Undergraduate	4	3.4
Total	**119**	**100.0**
Marital status	**119**	**100.0**
Single	16	13.4
Married	92	77.3
Separated	11	9.3
Total	**119**	**100.0**

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Table 4.1 Frequency and percentage distribution of clients' general characteristics (cont.)

Characteristics	Frequency (N)	Percentage (%)
Occupation		
Self-employment	99	83.2
Employment	8	6.7
Unemployment	11	9.2
No – response	1	0.9
Total	**119**	**100.0**

Like the general situation of the other districts in the mountainous north-central of Vietnam, in particular, and Vietnam in general, the main occupation of people here is self-employment. About nearly 84% of clients are self-employed, 6.7% are employed, while 9.2% are unemployed.

4.1.2 Health service quality

Generally on all aspects of quality of service, most customers rate MHCT as acceptable or satisfied. So when asked to assess the MHCT services, all customers evaluate at the level of "acceptable" or higher. Especially rates of acceptance and satisfaction with the overall service are very high, about 95% in the two districts. This shows the clients' acceptance of services is very positive. The clients' satisfaction about the service is again confirmed by the percentage of clients who will continue to use the mobile service is quite high (117 out of 119 customers, or 99.2%) and also 94.1% of customers would recommend their relatives and friends to use the mobile HCT services.

Health service quality in this study refers to assessment about quality of the service that provide the clients good conditions and services. It includes the following factors like waiting time, staff's attitude and skills, communication materials, confidentiality, counseling information and convenience of the service.

The research shows that with clients answering about their satisfaction with waiting time using the service, most of them feel that the time that they spend to use the mobile HCT service is acceptable. This means the time that they get the

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service is not too long in comparison with their expectation. Meanwhile, there is only 2.5% who are satisfied with the waiting time.

Table 4.2 The frequency and percentage distribution of mobile HCT clients' satisfaction by waiting time

Waiting time	Frequency	Percentage
Acceptable	62	52.1
Satisfied	3	2.5
No-response	54	45.4
Total	**119**	**100.0**

In terms of the general health service, in general and HIV/AIDS in specific, service professional knowledge and the attitude of the staff are very important. When asked about the counselors' skills and staff's attitude of mobile service, most of the clients find they are acceptable. For consulting skills, 86.6% of clients rate acceptable and 13.4% are satisfied. Meanwhile, the satisfaction of staff's attitude is higher than the satisfaction of consulting skills (N = 22 vs. N = 16; 18.5% vs. 13.4%).

Table 4.3 The frequency and percentage distribution of mobile HCT clients' satisfaction by staff's consulting skills and attitude

Consulting Skills	Frequency	Percentage
Acceptable	103	86.6
Satisfied	16	13.4
Total	**119**	**100.0**
Staff's attitude	**Frequency**	**Percentage**
Acceptable	97	81.5
Satisfied	22	18.5
Total	**119**	**100.0**

The confidentiality plays an important role in HIV/AIDS prevention and treatment. In this research, the clients' satisfaction with the confidentiality of service is quite good. About 80.7% of them rate acceptable and 18.5% are satisfied. This is an important point for the development of the service.

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Table 4.4 The frequency and percentage distribution of mobile HCT clients' satisfaction by confidentiality

Confidentiality	Frequency	Percentage
Acceptable	96	80.7
Satisfied	22	18.5
No-response	1	0.8
Total	**118**	**100.0**

In total, 118 clients evaluated the consulting information that counselor provided. Most of them (97.5%) feel acceptable regarding the contents and knowledge of consulting information. And 1.7 % of them are satisfied and one client did not answer the question.

Table 4.5 The frequency and percentage distribution of mobile HCT clients' satisfaction by consulting information

Consulting information	Frequency	Percentage
Acceptable	116	97.5
Satisfied	2	1.7
No-response	1	0.8
Total	**118**	**100.0**

The satisfaction of clients about HIV/AIDS communication materials HIV/AIDS which are available at HCT areas include the content, form of communication materials in HIV counseling, testing and prevention. The materials include flyers, brochures, and posters.

Table 4.6 The frequency and percentage distribution of mobile HCT clients' satisfaction by communication materials

Communication materials	Frequency	Percentage
Acceptable	73	61.3
Satisfied	4	3.4
No-response	42	35.3
Total	**77**	**100.0**

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In this research, we found that most of clients (61.3%) feel acceptable regarding the HIV/AIDS communication materials. And 3.4% of them are satisfied with materials.

Table 4.7 The frequency and percentage distribution of mobile HCT clients' satisfaction by convenience of service

Convenience of service	Frequency	Percentage
Acceptable	75	63.0
Satisfied	43	36.1
No-response	1	0.9
Total	**118**	**100.0**

In this research, convenience of the service refers to distance of HCT location and clients' comfort in accessing the service. Convenience is an important feature of MHCT service as it aims to reach population in mountainous and remote areas. When the clients feel comfortable and safe, in addition the short or acceptable distance from their house, they will be ready to use the service. The clients' satisfaction with the convenience of HCT service is presented in Table 4.7. Results indicate that the majority of clients (63.0%) in this study feel that the convenience of MHCT service is acceptable. The percentage of clients who are satisfied with the service is quite high at 36.1%.

4.2 Multivariate analysis

To explore socio-economic factors and health service quality on the clients' satisfaction, binary logistic regression models are used. The dependent variable (clients' satisfaction) has two categories, *satisfied* = 1 and *acceptable* = 0. Two main models are constructed to predict effects of socio-economic factors and health service quality on clients' satisfaction.

Before running binary logistic regression models, bivariate analysis with Chi-squares test was used for the independent variables and the dependent variables.

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Model 1 shows the effects of socio-economic factors (gender, occupation, ethnic group, education level, and marital status) on clients' satisfaction. Model 2 shows the effects of health service quality factors like confidentiality, staff's consulting skills and attitude, consulting information and geographic convenience of the service in addition to socio-economic factors.

In Table 4.8, the results in Model 1 present that there is only factor, gender which has significant association with clients' satisfaction. The other factors such as occupation, marital status and education level do not affect on clients' satisfaction when they accessed the MHCT service.

Table 4.8 Binary logistic regression results for socio-economic factors and health service quality factors with clients' satisfaction

Independent variables	Model: Socio-economic and health service quality factors affecting on clients' satisfaction			
	Model 1		Model 2	
	B	Odds ratio	B	Odds ratio
Gender				
Male®				
Female	**-1.959***	0.123	-.764	0.141
Ethnic group				
Thai®				
Non-Thai	1.444	4.238	0.496	1.643
Marital status				
Separated®				
Married	.875	2.400	-2.067	.125
Single	1.106	3.022	-3.259	.038
Educational level				
Illiteracy®				
Junior education	-20.317	0.000	-20.498	.000
Undergraduate	.245	1.278	1.594	4.923
Occupation				
Unemployment®				
Self-employment	18.613	1.212	-3.960	0.019
Employment	-1.727	0.178	21.128	**1.498***
Counseling skills				
Acceptable®				
Satisfied			**3.803***	44.824
Staff's attitude				
Acceptable®				
Satisfied			**2.652***	14.187

*Reference group: ®; Significant level: * $p \leq 0.05$*

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Table 4.8 Binary logistic regression results for socio-economic factors and health service quality factors with clients' satisfaction (cont.)

Independent variables	Model: Socio-economic and health service quality factors affecting on clients' satisfaction			
	Model 1		Model 2	
	B	Odds ratio	B	Odds ratio
Confidentiality				
Acceptable®				
Satisfied			**3.196***	24.438
Counseling information				
Acceptable®				
Satisfied			**5.720***	304.851
Convenience of service				
Acceptable®				
Satisfied			-.993	.370

*Reference group: ®; Significant level: * $p \leq 0.05$*

Although in the univariate analysis the results show that the education level of clients is very low and the occupation is not likely stable, they are not important determinants of satisfaction.

In Model 2, when I add clients' satisfaction in health service quality factors, i.e. confidentiality, staff's consulting skills and attitude, consulting information and geographic convenience of the service, involving socio-economic factors, there are 5 factors which have significant association with the clients' satisfaction. Those include clients' occupation, staff's skills, staff's attitude, consulting information and confidentiality. Occupation of clients is significant with their service satisfaction. Customers' level of satisfaction on the skills and attitude of the staff, the confidentiality of the service, and having gained enough information are important factors that positively affect the overall level of clients' satisfaction toward the MHCT service.

In brief, the results in Table 4.8 show us two interesting pictures about the effects of socio-economic factors and satisfaction on health service factors on the client's satisfaction of mobile HCT. The effects differ by different factors in this study.

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In this study, through 2 main models, some factors are found to have significant effects on the client's satisfaction using the mobile service. Meanwhile, the

other factors do not show the relationship that was found in the previous research in the world.

In terms of the research hypothesis there is a significant relationship between the confidentiality of the service and client satisfaction. The results from this study confirm a significant association between confidentiality and clients' satisfaction. Therefore, we cannot reject the hypothesis that there is a relationship between the confidentiality of the service and the level of clients' satisfaction.

4.3 Discussion

In this section, the findings of the research are discussed and compared to findings in other similar studies. Also, the limitations of the research are highlighted.

The present study evaluates the characteristics of clients and their level of satisfaction with the MHCT services. The study also highlighted some factors that could impede or enhance the quality of the service.

The mobile HIV counseling and testing service is still new in Vietnam. Therefore; the research on factors affecting clients' satisfaction with mobile HIV counseling and testing service in Quan Hoa and Muong Lat districts, Thanh Hoa province is the first survey in Vietnam. Therefore, the results of the research provide meaningful and significant information and evidence for policy-makers and program administrators in improving the mobile HCT services and increasing clients' adherence in HIV/AIDS prevention, care and treatment programs in the mountainous areas of Thanh Hoa in specific and in Vietnam in general.

HCT is a bridge that leads to prevention and treatment, so this is a vital service in HIV service package combating against HIV/AIDS epidemic. Mobile HCT is an effective model in accessing high risk population in the remote and mountainous areas. Especially, when Vietnam is facing with many disadvantages in health care human resources and finance for HIV/AIDS programs in specific and health care system in general, MHCT model will be a timely solution. Thus, finding the factors affecting clients' satisfaction when they use the mobile HCT service is instrumental to assist the harm reduction program for "hard-to-reach" population more effectively.

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Confidentiality is deemed to be one of the most important factors in determining the level of clients' satisfaction. The results show that the level of clients' satisfaction in confidentiality of MHCT service is a statistically significant determinant of the overall satisfaction of the MHCT service, with the highest level of magnitude.

Confidentiality is the main underlying reason for not utilizing a HCT service and not getting tested for HIV. People fear of discrimination, stigma, alienation from family and relatives, people finding out, losing one's partner, and becoming a victim of violence if they are HIV positive. Previous studies have suggested the provision factors of the service such as concerns about convenience, credibility and especially the confidentiality of the test result contributed to the low utilization rate (Fylkesnes, Knuta et al. 1999; Nicole Angotti, Agatha Bula et al. 2009). Moreover; another research in the Kilimanjaro Region of Tanzania about mobile HCT service concluded that confidentiality relating to HIV stigma and discrimination, and fears of test disclosure were strongly associated with non-participation in mobile HCT(Jan Ostermann and Elizabeth A. Reddy 2011).

One of the barriers to accessing the HCT in South Africa was also the fear of a breach of confidentiality (Van 2003). Indeed, confidentiality is defined as a mandatory element in the implementation of the principles of HIV counseling and testing. It is a key factor affecting the quality of services and the involvement of clients of services. The HIV confidentiality was required to apply into the Public Health in New York State (CAC 2012).

Another important finding from this study is the satisfaction in attitude and skills of staff are important determinants of overall satisfaction in the utilization of MHCT services. It means that the better skills and attitude of the staff possesses, the more satisfied clients will be. The HCT service was identified as an opportunity for intensive education about HIV/AIDS prevention programs (Zachariah, Spielmann et al. 2003). There have been a few previous research mentioned the clients satisfaction with the attitude and skills of the staff because clients would feel more confident and comfortable to discuss with counselors and this helps the consulting quality to be more perfect.

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Consulting information is also a significant factor with clients' overall satisfaction in this study. Quality and availability of information is identified as a key

factor in the National Strategy for Sexual Health and HIV (Roslyn, Wendy et al. 2003). In this study the binary logistic regression also shows that there is a significant relationship between consulting information and clients' satisfaction. It means that they concern and evaluate highly the importance of receiving HIV-related information. Clients' satisfaction in this study includes consulting information quality and understandable information. Clients feel acceptable and satisfied with general consulting information, however; they feel confused and not easy to understand the information that counselors provided. This result is also in accordance with the study of I.A. Kabbash et al. (2010) in which consulting information was influenced on the quality of mobile HCT and client satisfaction. It should be improved consulting information quality in order to attract more clients accessing the mobile HCT service.

In summary, MHCT is an effective means to reach HIV infected people in rural and remote areas of Vietnam. The finding from this study suggests that if the government would like to promote MHCT services, special emphasis must be placed on ensuring service confidentiality, overseeing the consulting information provided, and the training of counselors both their attitude and skills. These factors play an indispensable role in determining the levels of clients' satisfaction, and therefore the service utilization and adherence, in HCT service in general and MHCT in particular.

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CHAPTER V
CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

This final chapter draws together the main conclusions from the research, discusses follow-up initiatives for mobile HIV counseling and testing service, and makes general recommendations on how to respond to client satisfaction, such as mainstreaming HIV/AIDS, developing multi-sectoral responses and counseling training courses.

This study aims to find factors affecting clients' satisfaction with MHCT service in mountainous areas of Thanh Hoa Province, using secondary data from the cross sectional study on assessment of experimental model about mobile HCT in Quan Hoa and Muong Lat districts, Thanh Hoa, Vietnam. The survey was conducted by Vietnam HIV/AIDS Prevention Project funded by the World Bank. The dependent variable in this study is clients' overall level of satisfaction while socio-economic and satisfaction in health service quality factors are used as independent variables. Socio-economic factors include gender, age, marital status, education, and occupation. Health service quality factors include waiting time, consulting information, attitude and skills of staff, confidentiality, communication materials, and convenience of the service.

As I mentioned above, the research uses secondary data so there are some data limitations which affect research results and have less control from this data.

Most clients in this study are not young. Nearly 60% of them are 26 years old and older, with the mean age of 28.09. More female clients access the MHCT than male. More than half of them are married and about more than 90% of them have a junior level educations or illiterate. Most clients (95.4%) find the waiting time of consulting acceptable. The percentage of clients who are satisfied with confidentiality of MHCT service is 18.6%. For attitude and skills of staff, more than 80% of clients rate acceptable while the remaining feel satisfied. When clients use MHCT service in

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this site, the clients feels convenient in accessing the service at the acceptable level of 63.6% and at the satisfied level of 36.4%. Clients' satisfaction with communication materials and consulting information is quite high at acceptable level. The proportions are 94.8% and 93.3%, respectively.

Findings highlight the significant feature of MHCT health service quality namely the confidentiality of the service. The level of clients' satisfaction in the confidentiality of MHCT service shows the most robust results compared to other significant factors as it reveals significant association with the HCT required standard and clients' expectancy, as well as the client's decision to continue using the service.

Another factor that shows a significant association with clients' overall satisfaction is HCT consulting information. The selection of consulting information helps clients know and understand the information regarding HIV/AIDS. In the field of HIV/AIDS, the provision and transmission of information to clients are even more important. It involves risk assessment, and health status of the client. Therefore, the information provision in HIV/AIDS consulting is very important; it is not only accurate information but also close, enough, and early understandable ones.

The research has also shown the importance of staff's attitude and skills. Attitude and skills of the staff plays a vital role in accessing the service from clients and also assessing and understanding clients' risks. Therefore, it is more important to pay more attention to improve these training factors in order to be more effective in helping counselors to adapt to the client's perception and culture. For example, the activities and information given in the training should be designed in accordance with counselors' needs and should be linked to clients' particular problems.

5.2 Recommendation

5.2.1 Recommendations for HIV/AIDS intervention programs in Thanh Hoa Province

The following recommendations proposed here are based on the results that a number of factors have significant effects on clients' satisfaction with MHCT.

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1) Confidentiality is a strong factor affecting clients' satisfaction. Thus, the intervention programs should build up a mechanism in MHCT service to ensure clients

of the confidentiality of the service. This can be done via training courses for the staff and give regulations and processes about HCT provision in HCT sites. Moreover, the intervention programs should focus on strengthening communication activities in order to help clients to trust the service. HIV/AIDS confidentiality policy to be put in places at all the HCT sites and the community to safeguard the interests of the clients. In addition, the intervention programs should seek cooperation and support from partners in the community to possess consulting rooms with better quality.

2) Intervention programs should be given priority to conduct refreshing courses for consulting skills of the counselors to improve counselors' attitude and skills by several channels such as direct instruction by HCT experts or participation in short-term training courses. Besides, this can be done through experiential learning trips from other HCT sites.

3) MHCT services should have a counselor who can speak a language that ethnic minorities will understand; they should involve some culture exchange activities to offer HCT so that those who cannot communicate in Kinh language (Vietnamese) can also benefit from MHCT.

4) Community action to reduce stigma and discrimination around HIV or AIDS and to increase health promotion is needed in mountainous and remote areas.

5) Intervention programs should cooperate with other partners to air habitually to educate families and community members on HIV or AIDS issues via more media and radio talks. Especially, the result of this study show that 31% clients was illiterate and ethnic minorities, media and radio talks should use suitable ethnic minority language that helps people easy to understand.

5.2.2 Recommendations for future research

1) This research has revealed some perspectives and experiences of a group of clients concerning their satisfaction of an approach for MHCT service. Due to the scope of the issue and the limitations of the study, the results are not able to represent the generalized condition for all people in Thanh Hoa province. This study only looks at the experience of 119 clients. However, further studies could focus more on the statistical analysis of the client's satisfaction, perhaps using a combination of quantitative and qualitative research approaches. In addition, further research would

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need to be conducted with more groups of participants so that generalizations can be made.

2) Further research could also be conducted to compare the effectiveness of MHCT service and stand-alone HCT service. From there, we can see the level of clients' satisfaction between the two models and to figure out the weak and strong point of each service in order to bring clients with the most effective services.

3) Other recommendations for further research include the following: continue to explore the demographic changes in our clients and tie them more closely to changes of health service quality; identify which demographic factors affect clients' satisfaction.

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APPENDIX

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Questions from the questionnaire that are used in this study:

No	Question	Answer
A. General information		
A.1.	Gender (Observation)	1. Male 2. Female
A.2.	When you were born?:	.....
A.3.	What is your ethnic?	1. Kinh 2. Thái 3. Mường 4. H'Mông 99. Other (Specify).....
A.4.	What is your main occupation that gives you major income?	1. Farmer 2. Worker at forest 3. Business 4. Staff at the restaurants / hotel / entertainment areas 5. Pupil/Student 6. Civil servants and employees 7. Freelance 8. Unemployment 99. Other (Specify).....
A.5.	How long have you lived here?	1. Over 10 years 2. From 5- to 10 years 3. From 1- to 5 years 4. Less than 1 year
A.6.	Do you and your wife/husband often work away from the residence? Explanation: each time in 1 month.	1. Yes 2. No
A.7.	What is your highest level of education?	1. Primary 2. Secondary 3. High

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		4. Intermediate / vocational 5. Undergraduates 6. Illiteracy
A.8.	What is your current marital status?	1. Never married 2. Married and living with wife / husband 3. Married but do not live regularly with his wife / her husband because of one person working far away home 4. Divorced / separated 5. Widowed
A.9.	How often do you come to HIV counseling and testing?	1. The first time 2. More than two times
B. Acceptabilityofclients about HCT		
B.1.	How do you go to HCT by?	1. By walk 2. By cycle 3. By motorbike 4. By public car 99. Other (Clarify)

B.2.	What do you think about the time you need to come from your residence to here?	1. Very long 2. Long 3. Normal (acceptable) 4. Quick 5. Very quick
B.3.	What do you think about fee that you have to pay to go to HCT?	1. No fee 2. Very low 3. Low 6. Normal (acceptable) 4. High

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		5. Very high
B.4.	What do you think about geographic convenience when you came to HCT?	1. Very untoward 2. Toward 3. Normal (acceptable) 4. Convenient 5. Very convenient
B.5.	What do you think about how easily to find the HCT?	1. Very difficult 2. Difficult 3. Normal (acceptable) 4. Easy 5. Very easy
B.6.	What do you think about the time you have to wait to use HCT?	1. Very long 2. Long 3. Normal (acceptable) 4. Fast 5. Very fast
B.7.	Do you satisfy about receptionist's attitude at HCT?	1. Very satisfied 2. No satisfied 3. Normal (acceptable) 4. Satisfied 5. Very satisfied
B.8.	Did you access (read, hear, see ...) communication materials at reception room?	1. Yes 2. No
B.9.	What are communication materials?	....
B.10.	What do you think about the culture suitability of the communication material?	1. Very unsuitable 2. Unsuitable 3. Normal (Acceptable)

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		4. Suitable 5. Very suitable
B.11.	What do you think about the suitability of the content of the communication materials?	1. Very unsuitable 2. Unsuitable 3. Normal (Acceptable) 4. Suitable 5. Very suitable
B.12	How do you satisfy about the communication materials?	1. Very unsuitable 2. Unsuitable 3. Normal (Acceptable) 4. Suitable 5. Very suitable
B.21	What do you think about the waiting time for counseling?	1. Very long 2. Long 3. Normal (Acceptable) 4. Quick 1. Very quick
B.22	How do you satisfy about the time that counselor talked to you	1. Very unsatisfied 2. Unsatisfied 3. Normal (acceptable) 4. Satisfied 5. Very satisfied
B.23	What is your satisfaction about the consultant's professional knowledge?	1. Very unsatisfied 2. Unsatisfied 3. Normal (Acceptable) 4. Satisfied 5. Very satisfied
B.24	According to him / her, Should counselor get additional knowledge to satisfy better consultation?	....

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		.....
B.25	How do satisfy about counseling skills of counselors?	1. Very unsatisfied 2. Unsatisfied 3. Normal (acceptable) 4. Satisfied 5. Very satisfied
B.26	According to you, What should consultants adjust on counseling skills for customers satisfy more about consultation?	....
B.27	Is the place of consultation discreet for you?	1. Yes 2. No
B.28	What guarantee that privacy and discreet?	....
B.29	What the reasons do you feel that the place of consulting without guaranteeing the privacy, confidential?	....
B.30	How are you satisfied about the discreet of consulting room?	1. Very unsatisfied 2. Unsatisfied 3. Normal (acceptable) 4. Satisfied 5. Very satisfied
B.31	How do you satisfy about facilities of consulting room?	1. Very unsatisfied 2. Unsatisfied 3. Normal (acceptable) 4. Satisfied 5. Very satisfied
B.32	According you, What facilities need	.....

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	to supplement / adjust at counseling rooms is better?	....
B.33	How long do you wait to have HIV test?	1. Less than 15 minutes 2. From 15- to 30 minutes 3. From 30- to 60 minutes 4. More than 60 minutes
B.34	How do you think about the waiting time to have HIV test?	1. Very long 2. Long 3. Normal (acceptable) 4. Quick 5. Very quick
B.35	How do you satisfy staff's attitude at laboratory room?	1. Very unsatisfied 2. Unsatisfied 3. Normal (Acceptable) 4. Satisfied 5. Very satisfied
B.36	According to you, How does the attitude of the laboratory staffs need to adjust what customers more satisfied with the consultation?	....
B.37	How do you satisfy about facilities at laboratory?	1. Very unsatisfied 2. Unsatisfied 3. Normal (acceptable) 4. Satisfied 5. Very satisfied
B.38	According to you, What should be added /adjusted to the facilities at the laboratory is better?	....
B.39		1 Very unbelievable

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	How do you believe the secret of identify information of HTC service?	2 Unbelievable 3 Normal (Acceptable) 4 Believable 5 Very believable
B.40	Why have you been unbelievable about secret of identity information of HCT service?	....
B.41	According to you, what should be adjusted to what customers feel secure about the privacy and identity of HCT services?	....
B.42	How do you satisfy when you get mobile HCT service?	1. Very unsatisfied 2. Unsatisfied 3. Normal (acceptable) 4. Satisfied 5. Very satisfied
B.43	What are you satisfied when you come here for HCT *(May be have more than one option)*	1. Convenience of HCT service 2. Attitude of health staff 3. Consulting skills of counselors 4. Professional knowledge of counselors 5. The discreet of information 6. Free fee 7. Facilities 8. Simple, quick process 99. Other (Specify)..... .....
B.45	Do you intend to continue to get mobile HCT service?	1. Yes 2. No

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B.46	Why do you want to continue to get mobile HCT service? *(More than one answer is optional)*	1. High HIV infection risk 2. Geographic convenience 3. High secret of information 99. Other (Specify)……
B.47	Why don't you continue get HCT service? *(More than one answer is optional)*	1. No HIV infection risk 2. Culture obstruction 3. Fear of being identified 99. Other (Specify)…… …
B.48	What particularly attracted you to search for mobile HCT services? (You can select multiple options)	1. High HIV infection risk 2. Geographic convenience 3. High secret of information 99. Other (Specify)……

B.49	Do you recommend your relatives or friends come to get HCT services?	1. Yes 2. No
B.50	According to you, what should we change to be mobile HCT activities better?	....
C. Customers' information needs		
C.1.	What information has consultant provided for you?	1. HIV infection risks 2. Significance of HIV testing result 3. What should do when know the testing result

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	(More than one answer is optional)	4. Methods of HIV infection prevention 5. Symptoms of HIV infection 6. The way of treatment of HIV infection 7. How to integrate into the community 8. How to care HIV patients 99. Other (specify) .....
C.2.	Do you get enough information that used language easy to understand?	1. Very easy to understand 2. Easy to understand 3. Normal (acceptable) 4. Difficult to understand 5. Very difficult to understand
C.3.	In addition to the above information, What any more information do you want to get?	1. Yes 2. No
C.4.	What information do you want to add? *(More than one answer is optional*	1. HIV infection risks 2. Significance of HIV testing result 3. What should you do when know the testing result 4. Methods of HIV infection prevention 5. Symptoms of HIV infection 6. The way of treatment of HIV infection 7. How to integrate into the community 8. How to care HIV patients 99. Other (specify)
C.5.		1. Consultants of mobile HCT staff

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	What by sources do you get such information? *(More than one answer is optional)*	2. Village nurse/commune Heath providers 3. Leaflets, brochures 4. Loudspeaker 99. Other (Specify) …….

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BIOGRAPHY

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