IMPACTS OF MASS MEDIA EXPOSURE AND LANGUAGE BARRIER ON COMPREHENSIVE HIV/AIDS KNOWLEDGE AMONG "DZAO" ETHNIC MINORITY IN YEN BAI PROVINCE, VIETNAM

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ABSTRACT

This study aimed to examine the impacts of mass media exposure and the language barrier on knowing about HIV/AIDS and comprehensive HIV/AIDS knowledge among 805 "Dzao" ethnic minority population aged 15-49 years in Yen Bai province, Vietnam when controlled for socio-demographic characteristics. Secondary data came from the survey on HIV/syphilis infection rate, and risk behaviors related to HIV transmission, among some ethnic minority groups in Vietnam.

The results of binary logistic regression indicate that mass media exposure, except the frequency of reading the newspaper, and language barrier were the factors affecting knowing about HIV/AIDS. Meanwhile, only language barrier affected comprehensive HIV/AIDS knowledge. The people who could communicate in Vietnamese were 2.8 times more likely to have comprehensive knowledge of HIV/AIDS than the people who could not communicate in Vietnamese.

The study's results suggested that communication strategy in HIV/AIDS prevention should be further interested in ethnic minority populations. In detail, communication materials and programmes should be designed and developed in both local language and Vietnamese, so that they can access HIV/AIDS information easily even if they cannot communicate in the Vietnamese language.

KEY WORDS: MASS MEDIA/ LANGUAGE BARRIER/ HIV/AIDS KNOWLEDGE / "DZAO" EHTNIC MINORITY/ YEN BAI

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LIST OF ABBREVIATIONS

ADB	Asian Development Bank
AIDS	Acquired Immune Deficiency Syndrome
CSWs	Commercial Sex Workers
FHI	Family Health International
IDUs	Injecting Drug Users
IMB	Information Motivation Behavioral skills
KAP	Knowledge Attitude Practice
MOH	Ministry of Health
PLWHAs	People living with HIV/AIDS
SAVY	Survey Assessment of Vietnamese Youth
STI	Sexually Transmitted Infections
UNAIDS	The United Nations Joint Programme on HIV/AIDS
UNDP	United Nations Development Programme
UNFPA	United Nations Population Fund
UNGASS	United Nations General Assembly Special Session on HIV/AIDS
UNICEF	United Nations Children's Fund

CHAPTER I
INTRODUCTION

1.1. Problem statement

1.1.1. The situation of HIV/AIDS in Vietnam

The HIV/AIDS epidemic is one of the key public health challenges over the world. HIV/AIDS has spread to every country and with gathering speed causes illness and death in the poorest and most vulnerable populations. With no effective vaccine or cure likely to be available, the priority responses of government will remain prevention of HIV infection and, increasingly, treatment of AIDS. Although effectively reaching these populations with prevention and treatment programs presents difficulties, it offers an opportunity to limit the progress of the HIV/AIDS epidemic.

Vietnam is facing an HIV/AIDS epidemic that is accelerating while at the same time, changing its characteristics. The estimated number of people living with HIV in Viet Nam has been sharply increasing from approximately 96,000 to 245,000 during the four-year period between 1999 and 2003. The Ministry of Health (MOH) has reported that by September 30, 2009, there were 156,802 HIV infected cases in Vietnam, 34,391 AIDS cases and 44,050 AIDS related deaths. Nearly half of those infected and a majority of new HIV positive cases fall within the 20-29 age range. This epidemic displays a distinctly geographic pattern, e.g. Quang Ninh, Hai Phong and Ho Chi Minh City, with prevalence rates considerably above the mean across provinces.

In Vietnam, the disease is concentrated within high risk groups, mainly injecting drug users (IDUs) and commercial sex workers (CSWs). Therefore, a lot of interventions of HIV/AIDS transmission prevention in Vietnam has been implemented and mainly focused on high risk groups, including CSWs and IDUs. The researchers seem not to pay attention to general population, especially ethnic minority groups which have typical characteristics of culture, knowledge that can cause high risk

behaviors of HIV infection. Moreover, for CSWs and IDUs with high risk behaviors such as sharing needles/syringes or not using condom during sex intercourses even though they know HIV/AIDS transmission, the researchers often mainly focus interventions on risk behaviors.

Meanwhile, unlike high risk groups, knowledge on HIV/AIDS is the first thing which should be intervened among ethnic minority groups. The reasons are that (1) Ethnic minorities are part of the general population and behaviors of general population are not as risky as those of high risk groups. There are limitations with the data about HIV/AIDS incidence rate among ethnic minorities because the Vietnam, HIV/AIDS epidemic report provides data on HIV/AIDS infection rate by provinces/cities and by high risk groups (IDUs, CSWs), not by ethnic groups; (2) socio-demographic characteristics of ethnic minority groups differ from other population in the field of culture, education level among other characteristics and live in remote areas. Therefore, it is difficult for them to access general information as well as gain knowledge, especially about HIV/AIDS. For this reason, this study will focus on the knowledge among ethnic minority concerning HIV/AIDS.

1.1.2. The situation of HIV/AIDS in Yen Bai province

By August 31, 2009, the accumulated number of HIV cases in the whole province is 3,734, of which are 3,082 HIV infected cases located in Yen Bai city, 865 AIDS cases of which there were 758 Yen Bai people and 364 AIDS deaths of which there were 346 Yen Bai people. According to assessment of Vietnam Administration of HIV/AIDS Control (MOH) in 2008, Yen Bai province is ranked ninth in the ten provinces having highest HIV prevalence among their populations. Within the first 8 months of 2009, there were 371 newly detected HIV positive cases, in which the areas having highest number of newly detected cases were Yen Bai city, Tran Yen district and Van Chan district. The HIV/AIDS epidemic still concentrates on high risk populations such as IDUs, CSWs, STI patients. However, the number of HIV infected females is increasing tendentiously (101 females/652 PLWHAs, accounting for 15.5% of PLWHAs detected in 2007; 112 females/563 PLWHAs, accounting for 20% of PLWHAs detected in 2008; and 21.5% of PLWHAs in first 6 months of 2009). The proportion of HIV infection by age groups is 3.75% for group under 13 year old and

96.24% for age group of 13-49 year old (Yen Bai Provincial AIDS Prevention Center, 2009).

1.1.3. Ethnic minorities in Vietnam

There are 54 ethnic groups in Vietnam with 14% of the population for the whole country being from ethnic minority groups. The other 86% are ethnic Vietnamese, the majority population known as Kinh. Many ethnic groups pre-date Vietnamese settlement and others are migrants. Many ethnic minorities in Vietnam share language and history with other groups of other countries, while some groups are only found within the borders of Vietnam.

Most ethnic minorities in Vietnam remain rural residents. Most of these ethnic minority groups, except Chinese and Khmer groups are located in the Central Highlands and Mountainous areas, which accounts for 2/3 of the territory from the North to the South. The areas where ethnic minority groups are located contain a lot of risks for HIV/AIDS transmission such as opium plantation and its use, drug smuggling and transportation. In recent years, an increasing trend of drug addiction and injection has been observed in ethnic minority groups, especially in the remote border areas. In addition, in some ethnic minorities groups, premarital sex was considered to be a normal custom. Results from the research about Vietnamese youth indicated that the percentage of young married people in ethnic minority groups, aged between 15 and 24, who had sex before getting married was quite high, 39.8% for males and 26.1% for females (MOH, 2005).

1.2. Problem justification

Yen Bai is a Northern agricultural province with a population of over 740.000 people including 30 ethnic minority groups. “Dzao” ethnic minority group makes up 10.31% of the total and have a low average income. While there is a cultural predisposition toward premarital sex among some ethnic minority groups, including “Dzao” people, these groups are not well-equipped with knowledge about human reproduction and sexually transmitted diseases (Population Council, 2007). Many people even do not have any knowledge about puberty before their first experience. In

addition, a male or female can have many lovers and they are now independent in exploring romantic relationships as well as mate selection. “Young people in romantic relationships have more opportunities to spend time alone with their partners without their parents’ supervision” (Population Council, 2007). This condition makes it is easier for them to have premarital sex. Cultural predisposition and such limited knowledge of HIV/AIDS/STDs prevention and control resulted in the prompt increase of HIV/AIDS infection in some ethnic minority groups in Yen Bai province.

The limited knowledge of HIV/AIDS prevention was originated from the geographical and social-economic difficulties in education and communication activities focusing on STIs and HIV/AIDS prevention. Especially, it is very difficult for ethnic minorities groups to access communication programmes because they use local language. Therefore, cultural, language difference and low intellectual standards either were defined as great barriers for communication programs in ethnic minority groups. These are hidden risks of HIV infection among “Dzao” ethnic minority group in Yen Bai province.

From the above issues, it is necessary to carry out a study to further understand HIV/AIDS knowledge among the “Dzao” ethnic minority group in Yen Bai province. This study based on a survey about HIV/syphilys infection rate and risk behaviors related HIV transmission among some ethnic minority groups in Vietnam. This study focused on two main factor groups including mass-media exposure and language barrier. In a study about information and knowledge about HIV/AIDS among general population in Bangladesh, results found that mass media has statistical significant positive influence on correct knowledge on HIV/AIDS transmission and prevention (Sarkar, 2009). However, for ethnic minorities in Vietnam, not all of them can communicate in Vietnamese language while most information about HIV/AIDS advertised on channels of radio and television broadcasted in Vietnamese language. Therefore, even if they access mass media frequently, but just only channels broadcasted in local language, they still likely gain very little knowledge. Hence, this study will determine which one among mass media exposure and language barrier is more important and their impact on comprehensive knowledge of HIV/AIDS.

Not only would the findings and recommendations suggesting appropriate interventions for “Dzao” ethnic minority group, especially for “Dzao” youth, but they

would also contribute to develop interventions for other ethnic minorities as well as for an effective comprehensive National HIV/AIDS Prevention Plan for Vietnam.

1.3. Research question

Whether or not mass media exposure and language barrier affecting knowing about HIV/AIDS and the comprehensive HIV/AIDS knowledge among the "Dzao" ethnic minority in Yen Bai province, Vietnam?

1.4. Research objectives

1.4.1. Ultimate objective: To help program administrators to design appropriate interventions to increase the rate of people having comprehensive knowledge of HIV/AIDS among "Dzao" ethnic minority group in Vietnam**.**

1.4.2. Immediate objective:

To examine the impacts of mass media exposure, language barrier on knowing about HIV/AIDS and comprehensive HIV/AIDS knowledge among the "Dzao" ethnic minority in Yen Bai province.

CHAPTER II
LITERATURE REVIEW

2.1. Definition of ethnic minority

Every society contains ethnic minority populations. Ethnic minority should also be regarded as part of the general population, however, their style of life, language and culture can differ from the majority (website: http://en.wikipedia.org/wiki/Minority_group, Retrieved March 26, 2010). Ethnic minorities are also differently identified for various countries such as ethnic minority in Vietnam is defined as the population living in geographical remoteness (mountainous or highland areas) with lower level of human development and slower economic growth. They use local language which differs from Vietnam language and educational level among ethnic minority in Vietnam is usually quite low. However, for some countries, ethnic minority groups may be foreign migrants or people who live in one country but have origin from other country such as Hispanic populations in America or Vietnamese Americans. Vietnamese Americans are Vietnamese who immigrated to the US after the conclusion of the Vietnam war and comprise 3% of the population of Orange County California. Vietnamese are the fastest growing Asian Pacific minority in the United State. Although socio-economic status of ethnic minorities is different in various countries, this group seems to have the same characteristic on use of language. In detail, they use language which differs from language of the majority.

2.2. Applied theory

In order to respond to the HIV/AIDS epidemic, prevention interventions are designed and implemented by different models based on various target groups. Some main prevention interventions include HIV/AIDS knowledge improvement, behavior change communication, care and treatment, voluntary counseling and testing,

harm reduction interventions. Knowledge of HIV/AIDS is a first essential step in any HIV/AIDS prevention intervention. The information - motivation - behavior skills (IMB) model (Fisher & Fisher, 1992) was developed as a general model of AIDS risk reduction. According to the conceptualization of IMB model, there are three fundamental determinants of AIDS risk reduction, including information, motivation and behavioral skills. ***Information*** regarding the means of AIDS transmission and information concerning specific methods of preventing infection are necessary prerequisites of risk-reduction behavior. ***Motivation*** to change AIDS risk behavior is a second determinant of AIDS prevention and affects whether one acts on one's knowledge regarding AIDS transmission and prevention. ***Behavioral skills*** for performing specific AIDS prevention acts are the third critical determinant of AIDS prevention. People cannot enact AIDS prevention behavior if they do not know how AIDS is transmitted or can be prevented. Therefore, according to the IMB model, information is needed to identify ways of preventing HIV transmission and correct misconceptions about HIV transmission. It is also the first essential and important step in any AIDS risk-reduction intervention. The IMB model helps to suggest which need to be firstly studied and it is also the foundation to evidence the importance of studied topic. That is the reason why the IMB model is used to apply in this study, but will only focus on information which is the first stage of model.

IMB model is applied for many studies related to behavior and knowledge of HIV/AIDS prevention in other countries in the world such as United States and Botswana. Fisher et al. (2002) conducted a study on HIV risk behavior change intervention based on the IMB model for Inner City High School Youth in the State of Connecticut in the United States. In this study, more than half of the participants 61% were African American, 28% were Hispanic American and 11% classified their race as Caucasian, "mixed" or "other". This study assessed the effect of 3 theoretically grounded, school-based HIV prevention intervention on inner-city minority high school students' levels of HIV prevention information, motivation, behavior skills and behavior. A similar study on behavior related to HIV/AIDS prevention also used IMB model to study the Gender dimension in misconceptions about HIV/AIDS prevention and transmission in Botswana (Letamo, 2005). The purpose of the study was to use a gender-based approach to investigate misconceptions about HIV/AIDS prevention and

transmission. This study found that two popular misconceptions are the misconception that a person can get infected with HIV/AIDS through mosquito bites and the misconception that a person can get infected with HIV by sharing a meal with a person who has HIV/AIDS. These misconceptions are more popular among males than females. This study also found that lack of education is the main reason for higher misconceptions about HIV/AIDS prevention and transmission for both sexes. This study especially emphasized that widespread knowledge about HIV/AIDS is an important step leading to possible behavior change.

2.3. HIV/AIDS Knowledge among ethnic minority

According to a report on Greater Mekong Subregion for HIV/AIDS Vulnerability and Risk Reduction Among Ethnic Minority Groups, the rate of HIV infection among ethnic minority groups is increasing faster than among general population (ADB, 2005). In some studies for Hispanic populations, ethnic minority is associated with lower HIV/AIDS-related knowledge (McCaig, Hardy, & Winn, 1991). This idea is also demonstrated in a UNDP report on HIV/AIDS knowledge among migrants in Korea and a journal about knowledge of HIV/AIDS among migrants in New Delhi slums, which can also be a type of ethnic minority population. Korean-Chinese demonstrate a severe lack of knowledge concerning the exact nature and means of transmission of the disease. Awareness of modes of transmission appears to be very low and perceptions of AIDS as well as its risks are subject to a similar lack of awareness (UNDP, 2004). For the Delhi case, the majority of samples in the slums had no knowledge of HIV/AIDS, which is a serious problem in a country with at least three million infected people and a rising infection rate (Gupta & Mitra, 1999).

Like many other minority groups in some countries, knowledge of HIV/AIDS among ethnic minority population in Vietnam is a serious problem. They can know about HIV but their knowledge is not really good. Knowledge about HIV and about the real risk of HIV are abstract issues, as HIV is very new and the threat of HIV seems very strange for most people (UNFPA, 2007). According to Thailand's largest-ever household survey, less than half of all women aged 15-49 had comprehensive knowledge of HIV transmission, measured by knowing a minimum of

two ways of preventing HIV transmission and rejecting three common misconceptions. For the women with no education, nearly one-third did not know how to protect themselves and one-quarter have never heard of AIDS. Even fewer of the ethnic minority women knew about HIV/AIDS (UNICEF Thailand, 2007). The level of HIV knowledge among ethnic minority in Vietnam is even lower due to difficult conditions about geography, education, economic status. On the contrary, Vietnamese Americans in California, demonstrated high levels of HIV knowledge with respect to the actual modes of HIV transmission, although myths about HIV transmission were still common (Gellert et al., 1995).

2.4. Socio-demographic characteristics of ethnic minority and HIV/AIDS knowledge

2.4.1. Sex and HIV/AIDS knowledge

In a study on Hispanics in the United States, females had significantly lower levels of HIV/AIDS-related knowledge (London & Driscoll, 1999). According to UNDP report on a study about ethnic minority, women are more informed about potential transmission routes of HIV/AIDS. One possible reason for this may be the higher rate of education of women in schools as opposed to their male peers who display a higher rate of exposure through friends and advertising campaigns. Women also have a much more informed perception of AIDS (UNDP, 2004). In other study about Vietnamese American community of Southern California, women generally had lower levels of knowledge than men and fewer women than men are receiving enough information to protect themselves from HIV infection (Gellert et al., 1995).

2.4.2. Age and HIV/AIDS knowledge

Gender and age of respondents are characteristics are considered as predictors of HIV-related knowledge (Leblanc, 1993). In a study on Hispanic ethnic minority in the United States, they found that age and education were significantly associated with HIV/AIDS-related knowledge. However, among US general population, McCaig et al. (1991) found that age is negatively associated with HIV-related knowledge and positively associated with misperceptions about HIV

transmission and old age was negatively associated with HIV/AIDS knowledge (London & Driscoll, 1999). In a research paper about knowledge and prevention of HIV/AIDS in Bangladesh, the research show that the women in a higher age group had heard less of HIV/AIDS than women in young age (Sarkar, 2009).

2.4.3. Marital status and HIV/AIDS knowledge

Peruga et al. (1993) mentioned in the research about correlates of AIDS knowledge in samples of the general population that no study found significant differences in AIDS knowledge between married and unmarried respondents in general population samples. However, divorced and widowed respondents were less knowledgeable than married and never married individuals. In a study about perception of daily laborers towards HIV/AIDS/STD in urban slums of Berhampur town in India, the researcher found that marital status of the respondents did not have any relation with HIV/AIDS knowledge (Behera, Satapathy, Sahu, & Tripathy, 2008).

2.4.4. Education and HIV/AIDS knowledge

There is a clear relationship between level of education and HIV knowledge. Nearly one quarter of young ethnic minority people who had not attended school had never heard of AIDS (MOH, 2005). Also according to UNDP report on a study of migrant group in Korea, which can be considered a minority group in Korea, they found that better awareness of HIV/AIDS transmission is possibly a reflection of relatively higher levels of education. And better educated and younger persons are significantly more knowledgeable (Peruga & Celentano, 1993). This idea is also demonstrated in other study about US adult population that the person with lesser amounts of education have lower levels of HIV-related knowledge than those with greater educational attainment (McCaig, Hardy, & Winn, 1991).

In general, HIV-related knowledge is affected by educational levels of individuals. However, the educational level of ethnic minority in Vietnam is quite low. In a cross sectional study of sexual behavior and knowledge of HIV among urban, rural and minority residents in Vietnam, the researchers found that the level of education among ethnic minority is very low. Especially in Binh Lieu, a mountainous district of Quang Ninh province with major of respondents are ethnically members of

the hill tribes including "Dzao" population, 67% of the respondents had less than 6 years of education. Therefore, they could not read and write Vietnamese language (Thang et al., 2001). The reason of this problem is that minorities reported higher financial burdens to send children to school. These outcomes result in high rates of illiteracy and lack of Vietnamese language skills (World Bank, 2009). This problem limits them in accessing and sharing information, especially messages on HIV/AIDS, which are mostly expressed in Vietnamese language.

2.5. Language barrier and HIV/AIDS knowledge

Hispanics have been found to use or prefer a variety of media including Spanish language and English language (Amy M. Barnhart, B.A., 2004). It means that language is not a big barrier for Hispanic to access media exposure. However, the strong presence of Spanish language television channels, radio station and newspapers also provide opportunities for daily interaction with the language of Hispanic (Barnhart, 2004).

However, in a report on the Situation of Migrant Lao Women in Thailand and Their Vulnerability to HIV/AIDS, it mentioned that information of HIV/AIDS in Lao PDR is not yet accessible throughout the country, especially in the rural areas. For the most part the program is focusing in the city and schools because in the rural area, you mostly find ethnic minorities who cannot speak Lao. Similarly for migrants in Korea, the language barrier is also a disadvantage for them to access HIV/AIDS information and knowledge (UNDP, 2004). Jirakun A. et al also found that ethnic minorities in north Thailand lack of HIV knowledge due to language barrier, isolation and inadequate information (Jirakun et al., 1993). Therefore, messages about HIV/AIDS aimed at minority areas need to be broadcast more frequently in local languages on radio and television and posters need to rely on illustrative materials for the illiterate (Thang et al., 2001).

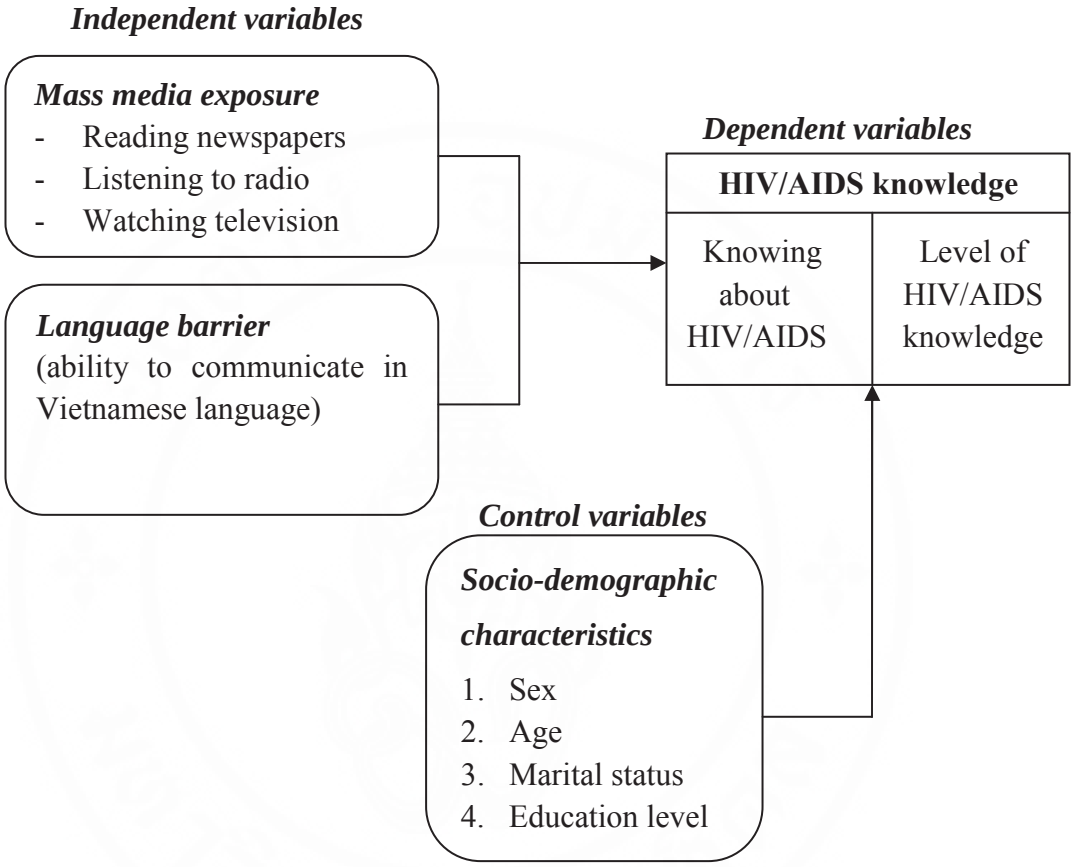
2.6. Mass media exposure and HIV/AIDS knowledge

In a study of US adults, it found that broadcast media, primarily television, is negatively associated with knowledge of HIV/AIDS, but ethnic minority are positively associated with use of broadcast media as a main source of information about HIV/AIDS (LeBlanc, 1993). In other study conducted in Vietnam, it stated that the primary source of information about HIV/AIDS was television and radio. However, the proportion of people who had heard about HIV/AIDS through television among ethnic minority was very low (Thang et al., 2001). Bangladesh is a country where women, youth and unmarried persons seem to be vulnerable populations with HIV/AIDS and those with low levels of education and media exposure, that is similar to status of ethnic minority in Vietnam. In a study about information and knowledge about HIV/AIDS among general population in Bangladesh, the researcher found that mass media has statistical significant positive influence on correct knowledge on HIV/AIDS transmission and prevention. In addition, television was the most dominant form of mass media in relation to exposure (Sarkar, 2009). In another study about mass media and HIV/AIDS knowledge, it is found that African Americans are more likely to use television and radio to obtain HIV/AIDS information, and less likely to use internet, newspapers or magazines (Hammond, 2006).

2.7. Limitations in literature review

Although there is much literature written on HIV/AIDS knowledge from other countries and in Vietnam, there still lacks literature on HIV knowledge among ethnic minorities. For this reason, most of literature on HIV knowledge focus on high risk groups such as injecting drug users, commercial sex workers, men having sex with men. As this is the first survey on knowledge, attitude and practice (KAP) among ethnic minorities in Vietnam, it is very difficult to seek findings from other research among this target group in Vietnam.

2.8. Conceptual framework utilizing the first stage of IMB model



2.9. Research hypotheses

2.9.1. Respondents who can communicate in Vietnamese language are more likely to know about HIV/AIDS than those who cannot communicate in Vietnamese language (H1).

2.9.2. Respondents who listen to radio at least 2 times per week are more likely to know about HIV/AIDS than those who did so less than twice per week (H2).

2.9.3. Respondents who watch television at least 2 times per week are more likely to know about HIV/AIDS than those who did so less than twice per week (H3).

2.9.4. Respondents who can communicate in Vietnamese language are more likely to have comprehensive HIV/AIDS knowledge than those who cannot communicate in Vietnamese language (H4).

2.9.5. Respondents who listen to radio at least 2 times per week are more likely to have comprehensive HIV/AIDS knowledge than those who did so less than twice per week (H5).

2.9.6. Respondents who watch television at least 2 times per week are more likely to have comprehensive HIV/AIDS knowledge than those who did so less than twice per week (H6).

CHAPTER III
RESEARCH METHODOLOGY

3.1. Source of data

The secondary data has been taken from a survey on HIV/syphilis infection rate and risk behaviors related to HIV transmission among some ethnic minority groups in Vietnam funded by the Vietnam HIV/AIDS Prevention Project. This is the project funded by the World Bank.

This survey was conducted by the Central Project Management Unit, four Regional Institutes (National Institute of Hygiene Epidemiology, Hochiminh Pasteur Institute, Nhatrang Pasteur Institute, Highland Institute of Hygiene Epidemiology) and the Provincial Project Management Units of 11 provinces in Northern, Middle and Southern area of Vietnam, during September 2006 to May 2007. This is the first survey and the latest survey as well among ethnic minority groups in Vietnam, concerning HIV/AIDS field.

3.2. Research instrument

Indicators of the survey were developed based on National Monitoring and Evaluation indicators. The questionnaire used in this study included questions on (1) socio-demographic characteristic, (2) knowledge of HIV/AIDS, (3) mass media exposure and (4) ability of Vietnamese communication.

3.3. Sample size and design

Sample size: 805 “Dzao” people, both males and females at the age of 15-49 who are living in the province from 01 month or more (apply sample size calculation method of World Health Organization (WHO) named "Sample Size Determination in Health Studies" version 2004).

Sample design: Systematic sampling was applied for this survey.

3.4. Ethical aspects

- Interview and blood sample collection was voluntary and nameless;
- Before interviewing, interviewers introduced themselves to the household, explained objectives, significance and study procedures;
- Face-to-face interviews for all questions and using local language to interview;
- Choosing a private place to interview and ensuring a comfortable condition for respondents;
- Interviewers signed a consent form for confirmation of verbal agreement to interview the of respondents.

3.5. Operational definition of variables

3.5.1. Dependent variable: There are 2 dependent variables: (1) Knowing about HIV/AIDS and (2) Level of HIV/AIDS knowledge

Regarding to the first variable, knowing about HIV/AIDS is measured by ever-heard about HIV/AIDS and never-heard about HIV/AIDS of respondents. Regarding to the second variable, based on UNGASS indicators: Percentage of people at the age of 15-24 and 15-49 who both correctly identify ways of preventing HIV transmission and who reject major misconceptions about HIV transmission, 5 questions used for HIV/AIDS knowledge (Having only one faithful, uninfected partner can reduce the risk of HIV transmission; Condoms can reduce the risk of HIV transmission; A healthy-looking person can have HIV; Mosquitoes do not transmit HIV; Sharing food does not transmit HIV). The respondents could answer “yes” or “no” for 5 questions. According to UNGASS indicators as well as measurement tools of HIV/AIDS knowledge applied by some organizations such as UNAIDS, FHI, UNICEF, only respondents answer correctly all 5 questions, it just means they have comprehensive HIV/AIDS knowledge and answer correctly less than 5 questions means that they have non-comprehensive HIV/AIDS knowledge.

3.5.2. Independent variables:

There are two groups of independent variables: (1) Mass media exposure including reading daily newspapers, listening to radio and watching television; and (2) Language barrier. Socio-demographic characteristics with 4 variables being sex, age, marital status and education level are used as control variables.

Table 3-1: Summary of operational definition of variables

Variables	Operational definition	Level of measurement
Dependent variables		
Knowing about HIV/AIDS	The respondents have ever-heard or never-heard about HIV/AIDS at the time of survey	Nominal 0=Never-heard 1=Ever-heard
Level of HIV/AIDS knowledge	Level of knowledge of respondents at time of survey. Complete correct answers of 5 questions is defined as having comprehensive knowledge and non-comprehensive knowledge otherwise (Based on UNGASS Indicators)	Nominal 0=Non-comprehensive 1=Comprehensive
Independent variables		
Mass media exposure	Number of times that respondents read daily newspaper (except illiterate cases)	Ordinal 1= Several times /week 2= About 2-4 times/week 3=Less than 2 times/week 4=No
	Number of times that respondents listen to radio	Ordinal 1=Several times/week 2=About 2-4 times/week 3=Less than 2

		times/week 4=No
	Number of times that respondents watch television	Ordinal 1=Several times/week 2=About 2-4 times/week 3=Less than 2 times/week 4=No
Linguistic ability	Ability to communication in Vietnamese language (National language) of respondent at time of survey	Nominal 0=No 1=Yes
Control variables		
Sex	Male and female	Nominal
Age	Age of respondents at time of survey, from 15-49 years old	Ordinal It was categorized as age 15-19, 20-24, 25-29, 30-34, 35-39, 40-44 and 45-49
Marital status	Current marital status of respondent at time of survey.	Nominal 0=Never-married (Single) 1=Ever-married (Living with husband/wife; Living together without marriage Separate; Divorce; Widow/widower)
Educational level	Highest level of education at time of survey that respondent reached.	Ordinal 0= No education 1=Primary and higher

3.6. Data analysis

3.6.1. Descriptive statistics: used to describe characteristics of respondents.

3.6.2. Scale of knowing about HIV/AIDS: never-heard about HIV/AIDS (code=0) and ever-heard about HIV/AIDS (code=1). Scale of level of HIV/AIDS knowledge: correct answers of 5 questions: comprehensive (code =1) and correct answers of less than 5 questions: non-comprehensive (code =0)

3.6.3. Other techniques employed are binary logistic regression analysis to exam relationship between independent and dependent variables.

3.7. Limitations of the study

Because "Dzao" ethnic group live in many different areas with different geographic characteristics, leading different risk behaviors. However, this study is only implemented among "Dzao" ethnic group in the Yen Bai province. For this reason, the whole research was implemented in only 11 provinces and the researchers selected an ethnic minority in each province. Therefore, collected data cannot be sufficient to represent the general "Dzao" ethnic group in Vietnam.

In addition, because there was a cultural predisposition toward premarital sex among Dzao ethnic minority, the researcher would like to compare proportion of people having sexual intercourse between single people and married people. Therefore, the question on marital status was only asked for the respondents who have ever had sex. Other respondents had not been asked this question. Hence, this study also only described marital status of the respondents who have ever had sex.

CHAPTER IV
RESULTS AND DISCUSSION

This chapter consists of three sections. The first section describes the background information which includes socio-demographic characteristics, mass media exposure, linguistic ability and HIV/AIDS knowledge. Socio-demographic characteristics consist of sex, age, marital status and education level. Marital status is only mentioned among people who have ever had sex. Mass media exposure consists of reading daily newspaper, listening to the radio and watching television. Linguistic ability is ability of communication in Vietnamese language. The second section reveals the net relationship of mass media exposure, linguistic ability and HIV/AIDS knowledge controlling for socio-demographic characteristic by using binary logistic regression analysis. The third section discusses the results of the analyses of this study.

4.1. Background information

4.1.1. Socio-demographic characteristics of the respondents

Table 4.1 demonstrates some selected socio-demographic characteristics for the Dzao ethnic minority population who participated in the study including; sex, age, marital status and education level. The proportion of respondents is quite equivalent between male and female, 49% and 51% respectively. On average, the age of respondents was quite young with a median age of 28 although ages ranged from 15 to 49. The major proportion of respondents was within the 20-24 age group, 25-29 age group and 30-34 age groups at 21%, 18% and 17% respectively. Meanwhile, the proportion of respondents in the age groups of over 35 years old was quite low, around 10% per each age group. Regarding to marital status of respondents, most of them, 93% have ever married, while only 7% of them were single. Similar to other ethnic minority groups in Vietnam, as well as in other countries, education level in this group was quite low with more than a half of respondents having never been to school.

Table 4-1: Percentage distribution of selected socio-demographic characteristics among "Dzao" ethnic minority group

Socio-demographic characteristics	Frequency	Percent
Sex		
Male	391	48.6
Female	414	51.4
Total	*805*	*100.0*
Age		
15-19	133	16.5
20-24	168	20.9
25-29	147	18.3
30-34	140	17.4
35-39	85	10.5
40-44	91	11.3
45-49	*41*	5.1
Total	*805*	*100.0*
Mean: 28.9; Median: 28; Std. Dev: 8.8; Min: 15, Max: 49		
Marital status*		
Never-married	47	6.6
Ever-married	667	93.4
Total	*714*	*100.0*
Education level		
No education	415	51.6
Primary and higher	390	48.4
Total	*805*	*100.0*

*Only analyze data among the people who have ever had sex

4.1.2. Linguistic ability of respondents

Table 4-2: Percentage distribution of communication ability in Vietnamese language among "Dzao" ethnic minority group

Linguistic ability	Frequency	Percent
Ability of communication in Vietnamese language		
No	513	64.0
Yes	289	36.0
Total	*802*	*100.0*

There are two types of language used among this ethnic minority group. The first one is local language or ethnic language. The second one is Vietnamese language or National language. All respondents in this study can communicate in local language but not all of them can communicate in Vietnamese language. Table 4-2

shows that only 36% of respondents can communicate in Vietnamese language and 64% otherwise.

4.1.3. Frequency of mass-media exposure

Table 4-3 show the mass-media exposure among respondents including reading daily newspaper, listening to the radio and watching television. Except illiterate respondents, nearly a half (47%) of the rest have not read daily newspaper and 32% of them read less than 2 times per week. Reading several times per week had the lowest proportion of reading newspaper by respondents. The proportion of people who did not listen to the radio and watch television is quite high, 36% and 32% respectively.

Table 4-3: Percentage distribution of mass-media exposure among "Dzao" ethnic minority group

Mass-media exposure	Frequency	Percent
Frequency of reading daily newspaper *(Except illiterate cases)*		
Several times/week	28	7.6
About 2-4 times/week	49	13.4
Less than 2 times/week	117	32.0
No	172	47.0
Total	*366*	*100.0*
Frequency of listening to radio		
Several times/week	232	28.9
About 2-4 times/week	108	13.5
Less than 2 times/week	174	21.7
No	288	35.9
Total	*802*	*100.0*
Frequency of watching television		
Several times/week	274	34.0
About 2-4 times/week	117	14.5
Less than 2 times/week	157	19.5
No	257	32.0
Total	*805*	*100.0*

The proportion of people listening to the radio several times per week made up 29% and the lowest proportion related to listening to radio is about 2-4 times per week at 13%. Regarding to watching television, the highest proportion are watching several times per week (34%) and the lowest proportion is similar to listening to the radio. Only 15% of respondents watched television about 2-4 times per week. Table 4-4 shows that the proportion of people who can communicate in Vietnamese language reading newspaper at least 2 times per week (90%), listening to the radio at least 2 times per week (55%) and watching television at least 2 times per week (55%) is higher than the proportion of people who cannot communicate in Vietnamese language reading newspapers (10%), listening to the radio (45%), watching television (45%).

Table 4-4: Percentage distribution of "Dzao" ethnic minority people who have at least 2 times/week of mass-media exposure by Vietnamese communicating ability

Mass media exposure	Ability of communicating Vietnamese language			
	Yes	No	Total	Number
Reading newspaper ***				
Yes	89.6	10.4	100	77
No	67.3	32.7	100	287
Total	*72.0*	*28.0*	*100*	*364*
Listening radio ***				
Yes	55.2	44.8	100	339
No	22.2	77.8	100	459
Total	*36.2*	*63.8*	*100*	*798*
Watching television ***				
Yes	54.8	45.2	100	389
No	18.5	81.5	100	412
Total	*36.1*	*63.9*	*100*	*801*

Significant level: **** $p < 0.001$*

The result of Chi-square also shows that among the people who can communicate in Vietnamese language, the proportion of people reading newspaper (90%), listening to the radio (55%) and watching television (55%) at least 2 times per week is higher than otherwise, 67%, 22%, 18% respectively. Three types of mass media exposure and ability of communication in Vietnamese language are significantly associated at 0.001.

4.1.4. Knowledge of HIV/AIDS by respondents

4.1.4.1. Knowing about HIV/AIDS

Table 4-5 shows the distribution of "Dzao" ethnic minority people who know about HIV/AIDS by socio-demographic characteristics. Using Chi-square to test relationship between socio-demographic characteristics and knowing about HIV/AIDS, it demonstrates that all selected characteristics, linguistic ability and knowing about HIV/AIDS are significantly associated, except age.

Table 4-5: Percentage distribution of "Dzao" people who know about HIV/AIDS by socio-demographic characteristics and linguistic ability

Socio-demographic characteristics	Knowing about HIV/AIDS			
	Ever-heard (%)	Never-heard (%)	Total (%)	Number
Sex ***				
Male	85.2	14.8	100	391
Female	71.7	28.3	100	414
Total	*78.3*	*21.7*	*100*	*805*
Age				
15-19	84.2	15.8	100	133
20-24	78.6	21.4	100	168
25-29	83.0	17.0	100	147
30-34	74.3	25.7	*100*	140
35-39	76.5	23.5	*100*	85
40-44	72.5	27.5	100	91
45-49	70.7	29.3	*100*	41
Total	*78.3*	*21.7*	*100*	*805*
Marital status **				
Never-married	93.6	6.4	100	47
Ever-married	77.1	22.9	100	667
Total	*78.2*	*21.8*	*100*	*714*
Education level ***				
No education	65.8	34.2	100	415
Primary and higher	91.5	8.5	100	390
Total	*78.3*	*21.7*	*100*	*805*
Language ability * **				
Ability of communicating Vietnamese language				
No	70.4	29.6	100	513
Yes	92.0	8.0	100	289
Total	*78.2*	*21.8*	*100*	*802*

*Significant level: ** p<0.01 *** p<0.001*

Sex, education level, language ability and knowing about HIV/AIDS are significantly associated at 0.001. Marital status and knowing about HIV/AIDS are significantly associated at 0.01. The proportion of people ever-heard about HIV/AIDS among both male and female is quite high at 85% and 72% respectively. Only 15% of males and 28% of female have never heard about HIV/AIDS. Chi-square's result also found that males have ever heard about HIV/AIDS more than females. The proportion of people ever-heard about HIV/AIDS is also remarkably higher than the proportion of people never-heard about HIV/AIDS at all age groups. An example of this is the age group 15-19 in which 84% of them have ever heard about HIV/AIDS while only 16% otherwise. Table 4-5 also shows that the proportion of people ever-heard about HIV/AIDS among the never-married group and ever-married group is higher than the proportion of people never-heard about HIV/AIDS of the same groups at 94% and 77% compared with 6% and 23% respectively. It also shows that the proportion of people who have never married and have ever heard about HIV/AIDS is higher than the proportion of people who have ever married. In addition, the proportion of the people with primary and higher education level have ever heard about HIV/AIDS is higher than the proportion of those without education (92% and 66% respectively). Among the people with higher education, only 8% of them have never heard about HIV/AIDS. Regarding to language ability, the proportion of people who can communicate by Vietnamese language have ever heard about HIV/AIDS is very high (92%), while only 8% of them have never heard about HIV/AIDS. Chi-square's result also shows that the proportion of people can communicate in Vietnamese language have ever heard about HIV/AIDS is higher than the people cannot communicate in Vietnamese language at 92% and 70% respectively.

Table 4-6 shows that the proportion of people who read newspaper less than 2 times per week and at least 2 times per week and have ever heard about HIV/AIDS is very high (90% and 95% respectively). Only 5% of people who read daily newspaper at least 2 times per week have never heard about HIV/AIDS. The proportion among people who listen to the radio and watch television at least 2 times per week are similar and high (91%). Only 9% of people who listen to the radio at least 2 times per week have never heard about HIV/AIDS and this proportion among the people watching television is similar. Among the people who listen to the radio

less than 2 times per week, 69% of them have ever heard about HIV/AIDS and 31% otherwise. Similarly, among the people watching television less than 2 time per week, 66% of them have ever heard about HIV/AIDS and 34% otherwise. Chi-square's result shows that mass media exposure and knowing about HIV/AIDS are significantly associated, except frequency of reading daily newspaper. In detail, frequency of listening to radio, frequency of watching television and knowing about HIV/AIDS are significantly associated at 0.001. The Chi-square's result also shows that the proportion of people who listen to the radio at least 2 times per week (91%) and watch television at least 2 times per week (91%) is higher than the proportion of people who listen to the radio less than 2 times per week (69%) and watch television less than 2 times per week (66%).

Table 4-6: Percentage distribution of "Dzao" ethnic minority people who know about HIV/AIDS by mass-media exposure

Mass-media exposure	Knowing about HIV/AIDS			
	Ever-heard (%)	Never-heard (%)	Total (%)	Number
Frequency of reading daily newspaper				
Less than 2 times/week	90.0	10.0	100	289
At least 2 times/week	94.8	5.2	100	77
Total	*91.0*	*9.0*	*100*	*366*
Frequency of listening to radio ***				
Less than 2 times/week	69.1	30.9	100	462
At least 2 times/week	91.2	8.8	100	340
Total	*78.4*	*21.6*	*100*	*802*
Frequency of watching television ***				
Less than 2 times/week	66.4	33.6	100	414
At least 2 times/week	90.8	9.2	100	391
Total	*78.3*	*21.7*	*100*	*805*

Significant level: *** $p<0.001$

4.1.4.2. Level of HIV/AIDS knowledge

Table 4-7 shows the percentage distribution of people who have knowledge about HIV/AIDS for each question related to the ways of preventing HIV transmission and misconceptions about HIV transmission. The proportion of people that recognize sex with only one faithful, uninfected partner can reduce the risk of

HIV transmission (question 1) and using condoms can reduce the risk of HIV transmission (question 3) is quite high (78% and 70% respectively). The proportion of people that think sex with only one faithful, uninfected partner cannot reduce the risk of HIV transmission and using condoms cannot reduce the risk of HIV transmission are the same, registering just 9% and the proportion of respondents who do not know correct answer for question 1 and question 3 are at 13% and 22% respectively.

Table 4-7: Percentage distribution of "Dzao" ethnic minority people (who had ever heard about HIV/AIDS) have knowledge on HIV/AIDS (*based on UNGASS indicators)*

HIV/AIDS knowledge	Yes (%) (n)	No (%) (n)	Don't know (%)	Total (N)
1. Sex with only one faithful, uninfected partner can reduce the risk of HIV transmission	78.0 (492)	8.9 (56)	13.1 (83)	100 (631)
2. A person can get HIV from mosquito bites	33.6 (212)	44.7 (282)	21.7 (137)	100 (631)
3. Using condoms can reduce the risk of HIV transmission	69.7 (438)	8.8 (55)	21.5 (135)	100 (628)
4. A person can get HIV by sharing a meal with someone who is infected	33.2 (207)	40.8 (255)	26.0 (162)	100 (624)
5. A healthy looking person can have HIV	39.9 (252)	16.2 (102)	43.9 (277)	100 (631)

Level of HIV/AIDS knowledge *(among people ever-heard about HIV/AIDS)*	**Percent**	**Number**
Comprehensive knowledge	14.4	89
Un-comprehensive knowledge	85.6	529
Total	*100.0*	*618*
Level of HIV/AIDS knowledge *(among all respondents)*		
Comprehensive knowledge	11.2	89
Un-comprehensive knowledge	88.8	704
Total	*100.0*	*793*

For two misconceptions about HIV transmission, the proportion of respondents who reject the misconception that a person can get HIV from mosquito

bites (question 2) (45%) and the misconception that a person can get HIV by sharing a meal with someone who is infected (question 4) (41%) is higher than the proportion of respondents who do not reject 2 above misconceptions at 31% and 33% respectively. The proportion of respondents who do not know correct answer for question 2 is 22% and 26% of respondents do not know correct answer for question 4. For the last question, 40% of respondents recognized that a healthy looking person can have HIV while 16% of respondents do not think that a healthy looking person can have HIV. However, for this question, the proportion of respondent do not know correct answer is highest at 44%.

According to UNGASS indicator on HIV/AIDS knowledge, five questions are used to evaluate level of HIV/AIDS knowledge including comprehensive and non-comprehensive knowledge. Respondents who have ever heard about HIV/AIDS have to correctly answer all 5 questions to have comprehensive knowledge, otherwise they are sampled as having non-comprehensive knowledge. Table 4-7 shows that among the people who ever-heard about HIV/AIDS, only 14% of respondents have comprehensive knowledge while 86% of respondents have non-comprehensive knowledge. This table also shows that the proportion of people having comprehensive HIV/AIDS knowledge among all respondents is only 11% while 89% of respondents have non-comprehensive knowledge.

Table 4-8 shows the percentage distribution of level of HIV/AIDS knowledge by socio-demographic characteristic, mass-media exposure and language ability. Using Chi-square to test relationship, the result found that socio-demographic characteristics and HIV/AIDS knowledge are significantly associated except age. In detail, sex and HIV/AIDS knowledge are significantly associated at 0.001; marital status and HIV/AIDS knowledge are significantly associated at 0.05; education level and HIV/AIDS knowledge are significantly associated at 0.01.

Mass media exposure and HIV/AIDS knowledge are significantly associated, also except frequency of reading daily newspaper. In detail, frequency of listening to radio and HIV/AIDS knowledge are significantly associated at 0.05; frequency of watching television and HIV/AIDS knowledge are significantly associated at 0.01. The final factor is linguistic ability that is also significantly associated with HIV/AIDS knowledge at 0.001.

Table 4-8: Percentage distribution of level of HIV/AIDS knowledge by socio-demographic characteristic, mass-media exposure and language ability

Factors	Level of HIV/AIDS knowledge			
Socio-demographic characteristics	**Comprehensive**	**Non-comprehensive**	**Total**	**Number**
Sex ***				
Male	19.6	80.4	100	326
Female	8.3	91.7	100	290
Total	*14.3*	*85.7*	*100*	*616*
Age				
15-19	15.6	84.4	100	109
20-24	17.6	82.4	100	131
25-29	11.0	89.0	100	118
30-34	11.1	88.9	100	99
35-39	17.2	82.8	100	64
40-44	13.6	86.4	100	66
45-49	13.8	86.2	100	29
Total	*14.3*	*85.7*	*100*	*616*
Marital status *				
Never-married	26.2	73.8	100	42
Ever-married	13.9	86.1	100	505
Total	*14.8*	*85.2*	*100*	*547*
Education level **				
No education	9.7	90.3	100	267
Primary and higher	17.8	82.2	100	349
Total	*14.3*	*85.7*	*100*	*616*
Mass media exposure				
Frequency of reading daily newspaper				
Less than 2 times/week	18.4	81.6	100	255
At least 2 times/week	20.0	80.0	100	70
Total	*18.8*	*81.2*	*100*	*325*
Frequency of listening to radio *				
Less than 2 times/week	10.9	89.1	100	313
At least 2 times/week	17.9	82.1	100	302
Total	*14.3*	*85.7*	*100*	*615*
Frequency of watching television **				
Less than 2 times/week	9.6	90.4	100	270

At least 2 times/week	17.9	82.1	100	346
Total	*14.3*	*85.7*	*100*	*616*
Linguistic ability				
Ability of communicating Vietnamese language ***				
No	1.2	98.8	100	86
Yes	23.5	76.5	100	260
Total	*17.9*	*82.1*	*100*	*346*

*Significant level: * p<0.05 ** p<0.01 *** p<0.001*

Table 4-8 shows that proportion of male having comprehensive knowledge on HIV/AIDS is higher than female (20% and 8% respectively). Up to 92% of female do not have comprehensive knowledge on HIV/AIDS. The proportion of respondents having comprehensive knowledge on HIV/AIDS at age groups only oscillate from between 11% to 18%, in details, 16% at 15-19 age group, 18% at 20-24 age group, 11% at 25-29 and 30-34 age group, 17% at 35-39 age group and 14% at 40-44 and 45-49 age group. The proportion of people who have not had comprehensive knowledge of HIV/AIDS at age groups is over 82%. The proportion of respondents having comprehensive knowledge on HIV/AIDS among never-married group is higher than ever-married group (26% and 14% respectively). The proportion of respondents having comprehensive knowledge on HIV/AIDS among primary and higher education is also higher than the respondents without education (18% and 10% respectively). Up to 90% of respondents without education do not have comprehensive knowledge on HIV/AIDS.

Table 4-8 also shows that 20% of respondent who read daily newspaper at least 2 times per week having comprehensive knowledge on HIV/AIDS and 18% of respondents who read newspaper less than 2 times per week having comprehensive knowledge. The table also shows that the proportion of respondents who listen to radio at least 2 times per week having comprehensive knowledge on HIV/AIDS is higher than the proportion of respondents who listening to radio less than 2 times per week (18% and 11% respectively).

The proportion of respondents who listen to radio less than 2 times per week not having comprehensive knowledge is quite high (89%). Similarly, the

proportion of respondents who watching television at least 2 times per week having comprehensive knowledge on HIV/AIDS is higher than the proportion of respondents who watching television less than 2 times per week (18% and 10% respectively). Especially, up to 99% of respondent who cannot communicate in Vietnamese language do not have comprehensive knowledge on HIV/AIDS while only 1% of respondents have comprehensive knowledge. The table also found that the proportion of respondents who can communicate in Vietnamese language having comprehensive knowledge on HIV/AIDS is noticeably higher than the proportion of respondents who cannot communicate in Vietnamese language (23% and 1% respectively).

4.2. Impacts of mass media and Vietnamese language on knowing about HIV/AIDS and comprehensive HIV/AIDS knowledge

To examine the net effect of mass media and language barrier on knowing about HIV/AIDS and comprehensive knowledge of HIV/AIDS as stated in the research objective, binary logistic regression, in which knowing about HIV/AIDS knowledge and level of HIV/AIDS knowledge were treated as outcome variables (dichotomous in nature: for knowing about HIV/AIDS variable: 1=ever-heard; 0=never-heard; for level of HIV/AIDS knowledge: 1=comprehensive and 0=non-comprehensive) and mass media exposure, linguistic ability, socio-demographic characteristic as predictor variables, is the most appropriate method in this study. Based on Chi-square's result, two predictor variables including age and frequency of reading daily newspaper have been dropped out of both models of regression (2 outcome variables) because both of them and knowing about HIV/AIDS as well as level of HIV/AIDS knowledge are not significantly associated. For 2 outcome variables, two main models are used in this study. For the first main model (Model 1), there are 2 sub-models to predict knowing about HIV/AIDS among "Dzao" ethnic minority in Yen Bai province. Sub-model 1 considered the effect of socio-demographic characteristic (sex, marital status and education level) on knowing about HIV/AIDS only, whereas sub-model 2 focused on effect of mass media exposure (listening to radio, watching television) and linguistic ability (ability of

communication in Vietnamese language) on knowing about HIV/AIDS when controlled for socio-demographic characteristics.

For this analysis, if levels of significance is 0.05, it was considered as statistically significant. The results of the models are presented in Table 4-9. In sub-model 1, it is found that sex was significantly associated with knowing about HIV/AIDS knowledge. Females were 65% less likely to know about HIV/AIDS than males ($p<0.05$). Education level was significantly associated with knowing about HIV/AIDS knowledge ($p<0.001$). The people with primary and higher education level were 4.8 times more likely to know about HIV/AIDS than the people without education ($p<0.001$). The respondents who have ever married were 46% less likely to know about HIV/AIDS than respondents who have never married. However, it is not statistical significant at 0.05 level. Total the sub-model 1 explains for 11% variation of knowing about HIV/AIDS among "Dzao" ethnic minority at level of significant 0.001. In sub-model 2, mass media exposure and linguistic ability were included in order to examine the net effects of them on knowing about HIV/AIDS when controlled for socio-demographic characteristics. However, when examining the multi-collinearity between independent variables in the model of knowing about HIV/AIDS including 3 main independent variables and 3 control variables, the result showed that there is one correlation that is higher than 0.65. It means that there is multi-collinearity between linguistic ability variable and education level variable in this model. In other words, linguistic ability variable and education level variable have strong association (multi-collinearity = 0.77). Therefore, it will need to drop out the education variable. In sub-model 2, it is found that all variables were significantly associated with knowing about HIV/AIDS, except marital status. Females were 66% less likely to know about HIV/AIDS than males ($p<0.05$). The people who can communicate in Vietnamese language were 2.5 times more likely to know about HIV/AIDS than the people who cannot communicate in Vietnamese language ($p<0.01$). The people who listen to radio at least 2 times per week were 2.3 times more likely to know about HIV/AIDS than the people who listen to radio less than 2 times per week ($p<0.01$). The people who watch television at least 2 times per week were 2.4 times more likely to know about HIV/AIDS than the people who watch television less than 2 times per week (0.01). In total sub-model 2 explains for 13% variation of knowing about HIV/AIDS when

considering on mass media exposure and confounding factor (linguistic ability), when controlling for socio-demographic characteristics ($p<0.001$). It means that mass media exposure factor and confounding factor increase 2% explanation of knowing about HIV/AIDS variation (13% and 11%).

Table 4-9: Odds ratio of knowing about HIV/AIDS and comprehensive HIV/AIDS knowledge by mass-media exposure, linguistic ability, after controlling by socio-demographic characteristics

Factors	Knowing about HIV/AIDS Odds ratios (Model 1)		Comprehensive HIV/AIDS knowledge Odds ratios (Model 2)	
Socio-demographic characteristics	**Sub-model 1**	**Sub-model 2**	**Sub-model 1**	**Sub-model 2**
Sex				
Male (ref)				
Female	0.65 *	0.66*	0.46 **	0.58 †
Marital status				
Never-married (ref)				
Ever-married	0.46	0.51	0.54	0.66
Education level				
No education (ref)				
Primary and higher	4.77 ***		1.60 †	
Linguistic ability				
Ability of communication in Vietnamese language				
No (ref)				
Yes		2.46 **		2.80 ***
Mass media exposure				
Frequency of listening to radio				
Less than 2 times/week (ref)				
At least 2 times/week		2.25**		1.07
Frequency of watching television				
Less than 2 times/week (ref)				
At least 2 times/week		2.35**		1.30
LR chi square	**79.96*** **	**98.88*** **	**19.71 *** **	**36.09 *** **
Pseudo R square	**0.107**	**0.134**	**0.043**	**0.079**

Note: † $p<0.10$; * $p<0.05$ ** $p<0.01$; *** $p<0.001$

For the second main model (Model 2), there are 2 sub-models to predict level of HIV/AIDS knowledge among "Dzao" ethnic minority in Yen Bai province. Sub-model 1 considered the effect of socio-demographic characteristic (sex, marital status and education level) on level of HIV/AIDS knowledge only, whereas sub-model 2 focused on effect of mass media exposure (listening to radio, watching television) and linguistic ability (ability of communication in Vietnamese language) on level of HIV/AIDS knowledge when controlled for socio-demographic characteristics. The results of the models are also presented in Table 4-9. In sub-model 1, it is found that sex was significantly associated with HIV/AIDS knowledge. Females were 46% less likely to have comprehensive knowledge on HIV/AIDS than males ($p<0.01$). Education level did not show the significant relationship with comprehensive knowledge on HIV/AIDS at 0.05 level. However, statistics shows that respondents with primary and higher education levels were 1.6 time more likely to have comprehensive knowledge on HIV/AIDS than the respondents without education at significant level 0.1. The respondents who have ever married were 54% less likely to have comprehensive knowledge on HIV/AIDS than respondents who have never married. However, it is not statistical significant at 0.05 level. Total the sub-model 1 explains for 4% variation of having comprehensive knowledge on HIV/AIDS among "Dzao" ethnic minority at level of significant 0.001. In sub-model 2, mass media exposure and linguistic ability were included in order to examine the net effects of them on level of HIV/AIDS knowledge when controlled for socio-demographic characteristics. However, when examining the multi-collinearity between independent variables in the model of having comprehensive knowledge on HIV/AIDS including 3 main independent variables and 3 control variables, the result showed that there is one correlation that is higher than 0.65. It means that there is multi-collinearity between linguistic ability variable and education level variable in this model. In the other words, linguistic ability variable and education level variable have strong association (multi-collinearity = 0.78). Therefore, it will need to drop out the education variable. In sub-model 2, it is found that linguistic ability was significantly associated with HIV/AIDS knowledge. The people who can communicate in Vietnamese language were 2.8 times more likely to have comprehensive knowledge on HIV/AIDS than the people who cannot communicate in Vietnamese language ($p<0.001$). The people who

listen to radio at least 2 times per week were 1.1 times more likely to have comprehensive knowledge on HIV/AIDS than the people who listen to radio less than 2 times per week. The people who watch television at least 2 times per week were 1.3 times more likely to have comprehensive knowledge on HIV/AIDS than the people who watch television less than 2 times per week. However, both of them are not statistical significant at 0.05 level. In total Model 2 explains for 8% variation of having comprehensive knowledge on HIV/AIDS when considering on mass media exposure and confounding factor (linguistic ability), when controlling for socio-demographic characteristics ($p<0.001$). It means that mass media exposure factor and confounding factor increase 4% explanation of having comprehensive knowledge on HIV/AIDS variation (8% and 4%).

4.3. Discussion on the results of the data analysis

Similar to the findings from previous studies (Thang et al., 2001; Sarkar, 2007), a major proportion of "Dzao" ethnic minority had low education, even 52% of respondents have no education and most of them have ever married (93%) in this study. Majority of respondents are within the age of 15 to 34. Knowledge on HIV/AIDS among ethnic minorities found in this study is very low, which is also similar to other studies (UNFPA, 2007; UNICEF Thailand, 2007). In this study, 78% of respondents have ever heard about HIV/AIDS while only 14% of them have comprehensive knowledge on HIV/AIDS. The proportion of respondents who have never heard about HIV/AIDS is also quite high, at 22%. This is a serious problem in a country where HIV/AIDS infection rate is increasing and intervention programmes seem not to concentrate on ethnic minorities like Vietnam.

Findings from this study reconfirm previous conclusions that lack of knowledge of HIV/AIDS due to language barrier (Jirakun et al., 1993). This finding supported Hypothesis 1 and Hypothesis 4. A report on Migrant Lao Women also mentioned that mostly ethnic minorities living in rural areas and cannot speak Lao, therefore, HIV/AIDS information is focusing in the city and school only. In this study, language is also barrier for ethnic minority as access to HIV/AIDS information on radio, television and especially to have comprehensive knowledge on HIV/AIDS is

difficult because most of them cannot communicate in the Vietnamese language while most of information - education - communication (IEC) materials are disseminated in Vietnamese language. The proportion of respondents who can communicate in Vietnamese language and have ever heard about HIV/AIDS and who especially had comprehensive knowledge on HIV/AIDS is higher than the proportion of respondents who cannot communicate in Vietnamese language. The respondents who can communicate in Vietnamese language are more likely to have comprehensive knowledge on HIV/AIDS than the respondents who cannot communicate in Vietnamese language. In addition, Peruga et al. (1993) mentioned in their research that no study found significant differences in HIV/AIDS knowledge between married and unmarried respondents in general population. In this study, there is not also statistical significant associated between marital status and HIV/AIDS knowledge.

However, some unanticipated findings from this study were indicated as well. Regarding socio-demographic characteristics variables, sex and level of HIV/AIDS knowledge are not significantly associated. Meanwhile, in a study about Vietnamese American community of Southern California, the researcher concluded that women generally had lower levels of HIV/AIDS knowledge than men (Gellert et al., 1995). Results of this study only found that females were less likely to know about HIV/AIDS than males.

Nevertheless, this study's results only demonstrated that mass media exposure are significant associated with knowing about HIV/AIDS but not affect level of HIV/AIDS knowledge. It means that these findings only support Hypothesis 2 and Hypothesis 3, not support Hypothesis 5 and Hypothesis 6. Meanwhile, there was a relationship confirmed by previous studies (Sarkar, 2009) that mass media has statistical significant positive influence on correct knowledge on HIV/AIDS transmission and prevention. This unexpected result can be explained that there are some channels being broadcasted in local language on radio and television. However, it seem to broadcast very few HIV/AIDS information. Most of HIV/AIDS information are advertised through channels on radio and television in Vietnamese language. Therefore, if respondents even often listen to radio and watch television in their local language, they cannot get enough information to have comprehensive knowledge on HIV/AIDS. This unexpected result reconfirmed the important role of language in

dissemination campaigns and, particularly the inability of ethnic minority to communication in Vietnamese language.

In summary, this study indicated that both mass media exposure and language barrier affect knowing about HIV/AIDS but only language barrier affected level of HIV/AIDS knowledge among “Dzao” ethnic minority. This factor is affecting level of HIV/AIDS knowledge not only for “Dzao” ethnic minority in particular but also for Vietnamese ethnic minorities in general.

CHAPTER V
CONCLUSION AND RECOMMENDATIONS

This chapter also consists of three sections. The first section briefs the main findings of the study; the second section is recommendations for intervention programmes and the third section is recommendations for future research.

5.1. Conclusion

HIV/AIDS epidemic is still of great concern and spreading rapidly in many countries in the world. Vietnam is facing an HIV/AIDS epidemic that is accelerating. Most research on HIV/AIDS in Vietnam focused on high risk groups, hence this study has important meaning in helping program administrators to understand the situation of ethnic minorities. This study aims to examine the impacts of mass media exposure and language barrier on knowing about HIV/AIDS and level of HIV/AIDS knowledge among "Dzao" ethnic minority when controlling for socio-demographics. Two dependent variables are (1) knowing about HIV/AIDS and (2) level of HIV/AIDS knowledge. Two independent variables are language barrier and mass media exposure, including four factors: (1) ability to communicate in Vietnamese language, (2) frequency of reading newspapers, (3) frequency of listening to radio and (4) frequency of watching television. Four control variables represent socio-demographic characteristics; sex, age, marital status and education level.

Although study respondents were from 15 to 49 years, up to over 70% of respondents were less than 34 years old with a mean age of 29 years old. Most respondents had ever married (93%) and a half of respondents had no education. Education level of respondents who ever been class are mainly primary level. Therefore, the proportion of respondents who can communicate in Vietnamese language is also quite low (36%).

The proportion of respondents who had ever heard about HIV/AIDS is quite high (78%), while only 14% of them have comprehensive knowledge on HIV/AIDS. The proportion of males having comprehensive knowledge on HIV/AIDS is higher than female (20% and 8% respectively). The proportion of respondents among the never-married group with primary and higher education levels having comprehensive knowledge on HIV/AIDS, is higher than respondents among ever-married groups (26% and 14% respectively) and respondents without education (18% and 10% respectively).

Based on result of binary logistic regression analysis, the key findings from this research are that both mass media exposure and language barrier affect knowing about HIV/AIDS knowledge while only language barrier affect level of HIV/AIDS knowledge. The people who can communicate by Vietnamese language were 2.5 times and 2.8 times more likely to know about HIV/AIDS and have comprehensive knowledge on HIV/AIDS respectively than the people who cannot communicate in Vietnamese language ($p<0.01$ and $p<0.001$ respectively). In addition, the people who listen to radio and watch television at least 2 times per week were 2.3 times and 2.4 times respectively more likely to know about HIV/AIDS than the people who listen to radio and watch television less than 2 times per week ($p<0.01$). Mass media exposure is not significant associated with level of HIV/AIDS knowledge.

In conclusion, language barrier is the factor affecting both knowing about HIV/AIDS and level of HIV/AIDS knowledge. Linguistic ability was associated with knowing about HIV/AIDS and level of HIV/AIDS knowledge when controlled for socio-demographic characteristics. It is very appropriate with applied theory that information is the most important stage in the IMB model and in any HIV/AIDS intervention programme because language is the bridge which help respondents approach and get HIV/AIDS information to have comprehensive knowledge on HIV/AIDS.

5.2. Recommendations for intervention programme

Primarily, the results of this study will help policy and stakeholders in understanding the general situation of “Dzao” ethnic minority population, including

their situation in regards to HIV/AIDS knowledge of the population and help to provide input for more effective intervention support in Yen Bai province.

As there is an obvious significant effect of with linguistic ability, the intervention program should focus on the 2 following directions:

1. Strengthen the Vietnamese language ability of the ethnic minority population. The findings of this study showed that education level was not the factor affecting HIV/AIDS knowledge but it had strong association with linguistic ability. It can be explained that if people have never gone to school, it is very difficult to learn and communicate in Vietnamese language. The fact is that Vietnamese language is only taught at school and the older people are, the less they can communicate in Vietnamese language. Hence, being taught Vietnamese language by parents or older people is very rare if people have never gone to school. Therefore, in order to strengthen linguistic ability, the Government should have strategy on universalizing education for ethnic minorities first and foremost. At that time, strengthening HIV/AIDS knowledge is the duties of not only the health sector but also related sectors such as education. Additionally, ethnic minority group are very poor, therefore, authorities should develop a network including volunteers, peer educators, collaborators to organize Vietnamese language classes for these groups;

2. In order to increase proportion of people having comprehensive knowledge on HIV/AIDS, intervention programmes should focus on communication strategy. The communication strategy should use diverse modes such as through television, radio, newspaper, leaflets, posters and group meetings at communes. Target groups can include illiterate people, pupils, other general population groups. Due to language barrier, communication materials should be designed in both local language and Vietnamese language. Because the rate of illiteracy among Dzao ethnic minority is quite high, communication materials should be pictorial for easy understanding. Communication materials such as leaflets, posters, should be placed in public at schools and public places. With most of population having only a primary education level, the materials should use clear pictures and consist of very few words for easy reading and understanding;

5.3. Recommendations for future research

In Vietnam, ethnic minority populations are not a high risk group, but belong to a vulnerable group due to their lifestyle, low economic condition, very low education level and remote geographic position. Researches should therefore be more interested in this population and increase the amount of study with this population in the future;

Because “Dzao” ethnic minority in particular and ethnic minority population in general live in many different areas, it should include “Dzao” population samples from other areas or other ethnic minorities in the next studies. Not only does it help increase sample size which increase the usefulness of logistic regression analysis, it also explores the effect of ethnicity on HIV/AIDS knowledge. Then, study’s results can suggest appropriate interventions for various ethnic minorities.

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APPENDIX

Some selected questions from the questionnaire that are used in this study:

Code of questions	Questions	Code of answers
C103	How old are you now?	☐
C104	Have you ever been to classes?	1 = Yes 2 = No
C104b1	Do you know how to communicate in Vietnamese language (popular language)?	1 = Yes 2 = No
C105	What is your highest education level?	1 = Primary (1-5) 2 = Secondary (6-9) 3 = High school (10-12) 4 = Colleague/University
C107	Do you often read daily newspaper or magazine?	1 = Everyday 2 = About 2-4 times/week 3 = Once a week 4 = Less than once a week 5 = No 8 = Illiteracy
C108	Do you often listen to radio every day?	1 = Everyday 2 = About 2-4 times/week 3 = Once a week 4 = Less than once a week 5 = No
C109	Do you often watch TV every day?	1 = Everyday 2 = About 2-4 times/week 3 = Once a week 4 = Less than once a week 5 = No
C203	What is your marital status?	1 = Single 2 = Living with husband/

		wife 3 = Living together without marriage 4 = Separate 5 = Divorce 6 = Widow/ Widower
C401	Have you ever heard about HIV/AIDS?	1 = Yes 2 = No
C402	Can having sex with only one faithful, uninfected partner reduce the risk of HIV transmission?	1 = Yes 2 = No 8 = Do not know
C403	Can a person get HIV from mosquito bites?	1 = Yes 2 = No 8 = Do not know
C404	Can using condoms reduce the risk of HIV transmission?	1 = Yes 2 = No 8 = Do not know
C405	Can a person get HIV by sharing a meal with someone who is infected?	1 = Yes 2 = No 8 = Do not know
C408	Can a healthy-looking person have HIV?	1 = Yes 2 = No 8 = Do not know

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