

PREVALENCE AND FACTORS ASSOCIATED WITH HEPATITIS B INFECTION
IN STIENG TRIBE ADULTS IN BINHPHUOC PROVINCE, VIETNAM

Ms. Ai Thien Nhan Lam

A Thesis Submitted Partial Fulfillment of the Requirements
for the Degree of Master of Public Health Program in Public Health

College of Public Health Sciences

Chulalongkorn University

Academic Year 2011

Copyright of Chulalongkorn University

บทคัดย่อและแฟ้มข้อมูลฉบับเต็มของวิทยานิพนธ์ตั้งแต่ปีการศึกษา 2554 ที่ให้บริการในคลังปัญญาจุฬาฯ (CUIR)
เป็นแฟ้มข้อมูลของนิสิตเจ้าของวิทยานิพนธ์ที่ส่งผ่านทางบัณฑิตวิทยาลัย

The abstract and full text of theses from the academic year 2011 in Chulalongkorn University Intellectual Repository(CUIR)
are the thesis authors' files submitted through the Graduate School.

ความชุกและปัจจัยที่มีความสัมพันธ์กับการติดเชื้อไวรัสตับอักเสบบี ในชนเผ่าตองว้ายผู้ใหญ่
จังหวัดบึงพลาญ์ ประเทศเวียดนาม

นางสาวไอ เขียน นาน ลัม

วิทยานิพนธ์นี้เป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปริญญาสาธารณสุขศาสตรมหาบัณฑิต

สาขาวิชาสาธารณสุขศาสตร์

วิทยาลัยวิทยาศาสตร์สาธารณสุข จุฬาลงกรณ์มหาวิทยาลัย

ปีการศึกษา 2554

ลิขสิทธิ์ของจุฬาลงกรณ์มหาวิทยาลัย

Thesis Title PREVALENCE AND FACTORS ASSOCIATED WITH
HEPATITIS B INFECTION IN STIENG TRIBE ADULTS IN
BINHPHUOC PROVINCE, VIETNAM

By Miss Ai Thien Nhan Lam

Field of Study Public Health

Thesis Advisor Assistant Professor Khemika Yamarat, Ph.D.

Accepted by the College of Public Health Sciences, Chulalongkorn University
in Partial Fulfillment of the Requirements for Master's Degree

.....Dean of the College of Public Health Sciences
(Professor Surasak Taneepanichskul, M.D.)

THESIS COMMITTEE

.....Chairman
(Assistant Professor Prathurng Hongsrnagon, Ph.D.)

.....Thesis Advisor
(Assistant Professor Khemika Yamarat, Ph.D.)

.....Examiner
(Robert Sedgwick Chapman, M.D, M.P.H.)

.....External Examiner
(Professor Sirikul Isaranurak, MD, M.P.H.)

คำสำคัญ: ความชุก / ปัจจัย / ความรู้ / ไวรัสตับอักเสบบี / เผ่าสติง / บินฟลือก / เวียดนาม

ไอ เชียน นานาน ลัม: ความชุกและปัจจัยที่มีความสัมพันธ์กับการติดเชื้อไวรัสตับอักเสบบี ในชนเผ่าสติงวัยผู้ใหญ่
จังหวัดบินฟลือก ประเทศเวียดนาม (PREVALENCE AND FACTORS ASSOCIATED
WITH HEPATITIS B INFECTION IN STIENG TRIBE ADULTS IN
BINHPHUOC PROVINCE, VIETNAM) อาจารย์ที่ปรึกษาวิทยานิพนธ์หลัก:
ผู้ช่วยศาสตราจารย์ ดร. เขมิกา ชามะรัต, 69 หน้า.

การศึกษากาดัดขวางในกลุ่มผู้ใหญ่ของชนเผ่าสติง จังหวัดบินฟลือก (BINHPHUOC) ประเทศเวียดนาม
ได้ทำการศึกษาดังแต่เดือนกุมภาพันธ์ถึงเดือนมีนาคม 2555 โดยทำการศึกษาชาวสติงรวม 357 คน จาก 3 หมู่บ้าน
ในจังหวัดบินฟลือก วัตถุประสงค์หลักของการศึกษา 2 ประการคือ
เพื่อศึกษาความชุกของโรคไวรัสตับอักเสบบีในกลุ่มผู้ใหญ่ชนเผ่าสติง
และเพื่อศึกษาปัจจัยที่มีความสัมพันธ์กับการติดเชื้อไวรัสตับอักเสบบีในกลุ่มผู้ใหญ่ชนเผ่าสติง
เก็บรวบรวมข้อมูลโดยใช้แบบสอบถามประกอบการสัมภาษณ์ และการตรวจเลือด สถิติการวิเคราะห์ข้อมูลใช้ ความถี่
ร้อยละ ค่าเฉลี่ย และค่าเบี่ยงเบนมาตรฐานในการบรรยายลักษณะของตัวอย่าง
ไคสแควร์ใช้ในการประเมินความสัมพันธ์ระหว่างตัวแปรตามและตัวแปรอิสระ

ความชุกของการติดเชื้อไวรัสตับอักเสบบีในกลุ่มตัวอย่าง (HbsAg มีผลเป็นบวก) คือ 16.2% ตัวอย่างมีอายุเฉลี่ย
32.42 ปี จำนวนเกือบครึ่งหนึ่ง (45.7%) ไม่สามารถอ่านและเขียนได้ 66.4% แต่งงานแล้ว
ซึ่งส่วนใหญ่มีอาชีพทำการเกษตร (93.3%) และ 37.0% มีรายได้ไม่เพียงพอต่อความต้องการ
ตัวอย่างที่ศึกษามากกว่าครึ่งหนึ่งไม่เคยได้ยินเกี่ยวกับโรคไวรัสตับอักเสบบี (52.4%) มีเพียง 23%
ของผู้เข้าร่วมการศึกษานี้ที่ตอบคำถามเกี่ยวกับความรู้ได้ถูกต้อง 1 ถึง 6 คำถาม 24.6% ตอบคำถามได้ถูกต้องมากกว่า 6
คำถาม 35.3%, 30% ของผู้เข้าร่วมการศึกษาใช้แปรงสีฟันและมีดโกนร่วมกับคนอื่น
จากการศึกษาพบนัยสำคัญความสัมพันธ์ระหว่างเพศและการติดเชื้อไวรัสตับอักเสบบี
แต่ไม่พบนัยสำคัญความสัมพันธ์ระหว่างระดับความรู้และการติดเชื้อไวรัสตับอักเสบบี
สำหรับสุขลักษณะพบนัยสำคัญความสัมพันธ์ระหว่างการใช้บริการจากร้านตัดผม (0.01), การมีกรรไกรตัดเล็บของตนเอง
($p = 0.011$), การมีคู่นอนหลายคน ($p = 0.002$) กับการติดเชื้อไวรัสตับอักเสบบี
จากการศึกษานี้ชี้ให้เห็นถึงความจำเป็นในการให้สุขศึกษาและการให้ความรู้เพิ่มเติมเกี่ยวกับเชื้อไวรัสตับอักเสบบี
โดยเฉพาะอย่างยิ่งการติดต่อและแพร่เชื้อ

สาขาวิชา.....อนามัยการเจริญพันธุ์.....ลายมือชื่อนิสิต.....

ปีการศึกษา.....2554.....ลายมือชื่อ อาจารย์ที่ปรึกษาวิทยานิพนธ์หลัก.....

##5478818853: MAJOR PUBLIC HEALTH

KEYWORDS : PREVALENCE/ FACTORS/ KNOWLEDGE/ HEPATITIS B/
STIENG TRIBE/ BINHPHUOC/ VIETNAM

AI THIEN NHAN LAM: PREVALENCE AND FACTORS ASSOCIATED
WITH HEPATITIS B INFECTION IN STIENG TRIBE ADULTS IN
BINHPHUOC PROVINCE, VIETNAM. ADVISOR: ASST. PROF. DR.
KHEMIKA YAMARAT, Ph.D., 69 pp.

This cross sectional study was conducted from February to March 2012, involved 357 participants in 3 hamlets in Binhphuoc province. The study had two main purposes: first to determine the sero-prevalence of hepatitis B among Stieng tribe adults; second to identify factor associate with hepatitis B infection among Stieng tribe adults in Binhphuoc province, Vietnam. Data were collected by using a structured questionnaire and blood test. Frequencies, percentage, means, and standard deviation were used to describe the data. Chi-square was used to assess associations between dependent and independent variable.

The prevalence of hepatitis B infection (HBsAg positive) was 16.2%. The mean age was 32.42 and nearly half of the participant cannot read and write (45.7%), 66.4% were married. Their occupation were mostly farmer (93.3%), and 37.0% did not have enough money to meet the need. For knowledge on hepatitis B, more than half of the participant never heard about hepatitis B (52.4%), only 23% of them answer correct 1 to 6 questions of knowledge and 24.6% answer correct more than 6 questions. 35.3%, 30% of the participants shared toothbrush and razor with other. Significant association was found between gender and hepatitis B infection. There was not significant association between level of knowledge and hepatitis B infection. For the health behavior was found significant association between visiting community barber (0.01), personal nail-clipper (p= 0.011), multiple sexual partner (p= 0.002) with hepatitis B. Study finding indicate a need for more education on hepatitis B promotion, especially transmission.

Field of Study: Public Health..... Student's Signature:.....

Academic Year: 2011..... Advisor's Signature:.....

ACKNOWLEDGEMENTS

I would like to give thanks to Jesus, my God who is always with me to help, guide and encourage me in every-circumstances.

I would like to express the deepest appreciation to my thesis advisor Asst. Prof. Khemika Yamarat, Ph.D for her guidance and support during the entire course of my study. I would also want to express my sincere gratitude to Dr. Robert Sedgwick Chapman for guiding and advising in data analysis and Asst. Prof. Prathung Hongsranganon, Ph.D for encouraging and advising for developing my thesis.

My acknowledgement and thankful are also expressed to all of the teachers in College of Public Health Sciences for giving me a valuable knowledge during my study in the College.

I want to acknowledge and thanks to Health Prevention Center of Bu Gia Map district and Phu Nghia village clinic and leaders in three hamlets for supporting me during data collection period. I would like to thank all people in the research team for your work, care and energy to collect data.

I would like to thanks all people who pray for me and all my friends in Vietnam and in College of Public Health Sciences for their support and assistance during the study course.

Finally, I am so thankful to my dear “big” family in Vietnam and family in Thailand CTTM and EAM that God’s given for their love, support, prayer and encouragement...

CONTENTS

	Page
ABSTRACT IN THAI	iv
ABSTRACT IN ENGLISH	v
ACKNOWLEDGEMENTS	vi
CONTENTS	vii
LIST OF TABLES	ix
LIST OF FIGURES	x
LIST OF ABBREVIATIONS	xi
CHAPTER I INTRODUCTION	1
1.1 Background and Rationale	1
1.2 Research Questions	5
1.3 Hypothesis	5
1.4 Research Objectives	6
1.5 Variables of the study	6
1.6 Operational definition.....	7
1.7 Conceptual Framework	10
CHAPTER II LITERATURE REVIEW	11
2.1 Hepatitis B definition	11
2.2 Previous Study.....	13
CHAPTER III RESEARCH METHODOLOGY	18
3.1 Research Design	18
3.2 Study Area.....	18
3.3 Study Population	18
3.4 Sampling Technique.....	18
3.5 Sample and Sample size	21
3.6 Measurement Tools	22
3.7 Data Collection.....	24
3.8 Data Analysis	25

	Page
3.9 Ethical Consideration	26
3.10 Limitation	27
CHAPTER IV RESEARCH RESULTS	28
4.1 Sero-prevalence of hepatitis B virus in Stieng tribe adults	29
4.2 Characteristics and socio-demographic of Stieng tribe adults	29
4.3 Knowledge on Hepatitis B of the Stieng tribe adults	32
4.4 Health behavior of the Stieng tribe adults	34
4.5 Association between HBsAg test result and characteristics	36
4.6 Association between HBsAg test result and level of knowledge	38
4.7 Association between HBsAg test result and health behavior	39
CHAPTER V DISCUSSION, CONCLUSION AND RECOMMENDATIONS ..	42
5.1 Discussion	42
5.2 Conclusion	47
5.3 Recommendations	48
REFERENCES.....	49
APPENDICES	52
APPENDIX A Association between Knowledge levels and Characteristics.....	53
APPENDIX B QUESTIONNAIRE: ENGLISH	54
APPENDIX C QUESTIONNAIRE: VIETNAMESE	60
APPENDIX E RELIABILITY	66
APPENDIX F ETHICAL APPROVAL	67
APPENDIX F CONSENT FORM.....	68
VITAE.....	69

LIST OF TABLES

	Page
Table1 Prevalence of HBV infection the General Population or Healthy Individual in Vietnam	14
Table 2 Personal and socio-demographics characteristics of subjects	30
Table 3 Knowledge on Hepatitis B of the subject	33
Table 4 Knowledge level on Hepatitis B of the subject	34
Table 5 Health behavior of the subject	35
Table 6 Association between HBsAg test result and characteristics	37
Table 7 Association between HBsAg test result and level of knowledge	38
Table 8 Association between HBsAg test result and health behavior	40

LIST OF FIGURES

	Page
Figure 1 Geographical distribution of hepatitis B virus endemicity.....	2
Figure 2 Binhphuoc province located on Vietnam map	4
Figure 3 Estimated HBsAg+ prevalence by age group and gender	5
Figure 4 Conceptual framework	10
Figure 5 Sampling technique	20

LIST OF ABBREVIATIONS

WHO	World Health Organization
HBV	Hepatitis B virus
HBsAg	Hepatitis B surface antigen
HCC	Hepatocellular carcinoma
STIs	Sexually transmitted infections

CHAPTER I

INTRODUCTION

1.1 Background and Rationale

Hepatitis B virus discovered in 1966 and its effect is dangerous because of “silent disease” that people are infected from it without their unknowing. Therefore, most of people unaware with their infection and can pass virus to other unknowingly. They will be increased risk of developing serious liver disease late in life when the virus stays more than 6 months in their liver. Epidemiology of primary liver cancer has been found that 50% to 55% of cases of primary liver cancer are attributable to persistent viral infections with hepatitis virus B. Moreover, the trend of primary liver cancer is a result of a cohort effect relate to infection with hepatitis B and C viruses. In some developing countries, the incidence of primary liver cancer has decreased, possibly as a result of the introduction of hepatitis B virus vaccine (Bosch, 1999).

Hepatitis B virus (HBV) infection remains as a major global problem. All over the world, there are two billion people previously infected, more than 350 to 400 million people have developed chronic HBV infection, and causing one million HBV-related deaths each year (WHO, 2000). The ranging HBV infection varies with chronic HBV prevalence from 0.2% to 20%, according to geography (WHO, 2002). The world’s population lives in highly endemic areas, approximately 45%, such as Africa and the Asia-Pacific region (excluding Japan, Australia and New Zealand) (WHO, 2001_A). Asians have the highest rate of HBV infection, although hepatitis B can infect anyone. According to the Asian Liver Center at Stanford University, there are 260 million chronic carriers of HBV living in Asia; it means two-thirds of chronic carriers of HBV in the world (Nguyen, 2010).

Burden of HBV infection in the economic sector is substantial even early stages of chronic HBV infection, before the onset of advanced liver disease. The cost rose up with increasing severity of illness (Lavanchy D, 2005). A study in the US, 1995 that stratified cost by stage of liver disease, annual costs were estimated at \$4175 for a patient with compensated cirrhosis, \$22072 for a patient with decompensated cirrhosis, and \$19589 for a patient with HCC (Wong et al., 1995). In South Korea 1997, a study found that the total annual societal cost was estimated to be \$959.7 million (US\$) and remaining \$632.3 million direct to medical cost (Yang et al., 2001).

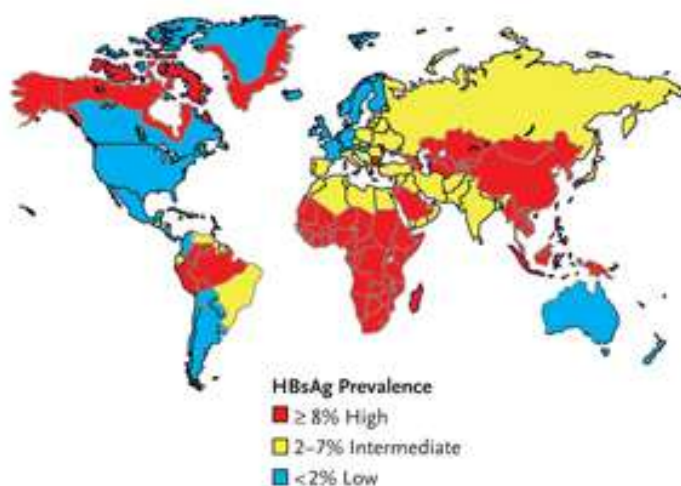


Figure 1. Geographical distribution of hepatitis B virus endemicity⁴.

In Vietnam

HBV infection remains a major public health problem in Vietnam. About 10% of population lived with chronic HBV infection and 23,300 cases death relate to HBV (2005) (Nguyen et al., 2008). However, HBV prevention and control in Vietnam is only universal infant vaccination program was introduced in late 2003 and HBsAg screening for blood donors in the 1990s. Therefore, the children were born before 2003 did not have HBV vaccination. Nearly 50% of patients with hepatitis attributed their disease to HBV. Up to 80% were positive for HBsAg in patient with liver cirrhosis or HCC (hepatocellular carcinoma) (Nguyen, 2010). These data strongly suggest that HBV is a major cause of liver diseases in Vietnam.

In previous study found that the rate of current or previous infection was found to linearly increase with age from 19.6% in infants to 79.2% in adults (Nguyen TY, 2007) and the prevalence of HBsAg positive is higher in males than females (Nguyen VT-T et al.; 2007) (Chau HH, 1995) (Tran T, 1986), and highly endemic HBV infection (19% HBsAg positive) in rural area (Nguyen VT-T et al.; 2007). As a result, people in rural area have high risk infected, especially ethnic people who live in remote areas, and adult with male gender who are the head and the main income in the family. Therefore, HBV infection and chronic HBV infection among 8 million people currently infected would be a huge burden on economic and health sectors in the future.

Study area, Binhphuoc is a mountainous province where located in the western region of the southeastern Vietnam, to the north of Hochiminh city and share the border with Cambodia. Binh Phuoc is one of the agricultural provinces of Vietnam, relying on cash crops such as cashew nuts, rice and rubber. Binhphuoc's population in 2009 was 873,598 with one majority group and 40 ethnic groups. Stieng tribe is a largest ethnic group in Binhphuoc with the population was 81,708 in 2009 (9.35% population in the province). Their occupations are farmers and labors with low level of education that are risk factor associate with HBV infection according to previous study (Kurcer et al.; 2002). The Stieng tribe is considered as poor minority group with low income (40UDS/month) (Katsushi Imai, 2007). Living in remote area and low education, therefore they are lack of health care and health information. According to health worker in the clinic who work among Stieng tribe shared that, they only go to hospital when the illness is too serious and all most cannot cure. They belong to vulnerable people from disease.



Figure 2. Binhphuoc province located on Vietnam map.

There are not much data and no study on this group of people about prevalence of HBV infection or liver disease because they do not go to hospital until the illness is too serious or they cannot go to hospital because of poverty, therefore they die at home without knowing exactly of the disease. This study with a purpose that to find out the prevalence and factors associated with HBV infection in this tribal people to help the health sector has a clear picture of this disease in this ethnic group. Moreover, in future may have an appropriate and sufficient intervention to this group of people through the find out of the study and to help them have a better health. The study was focus on reproductive health group with age from 18 to 49 years who are and going to be head of the family and taking care family. As mention above, the HBV control in Vietnam relies heavily on universal infant vaccination program which introduced late 2003; therefore the people in this study group have not received vaccinate in this program. Moreover, according to the previous study (Nguyen V.T.T, 2010) that estimate age-specific prevalence of HBsAg positive from other selected study found that the highest prevalence was seen in age group of 30 to 39 years in both male (19.3%) and female (14%) followed by age group of 40 to 49 years with male (18.6%) and female (13.4%). (Figure 3)

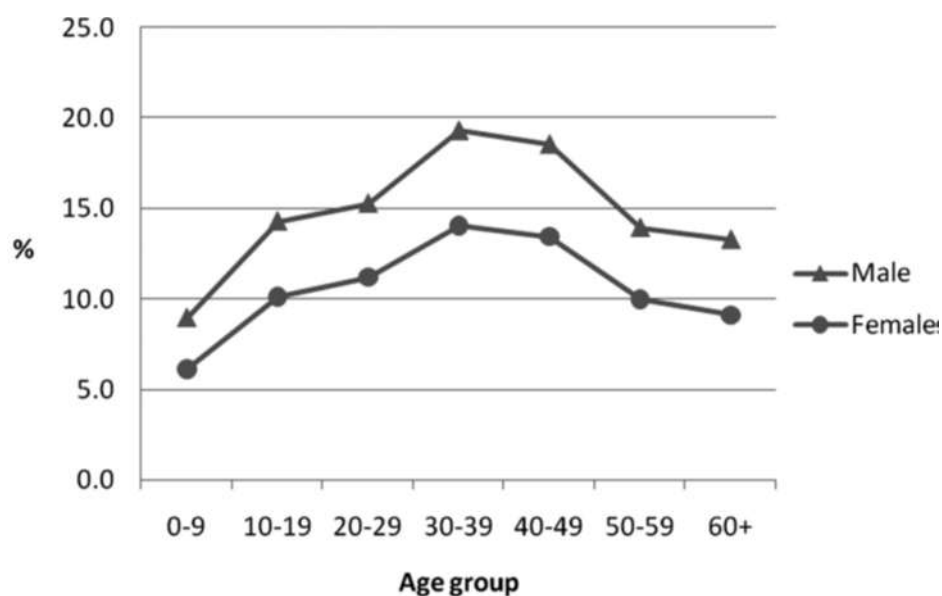


Figure 3. Estimated HBsAg+ prevalence by age group and gender

1.2 Research Questions

- What is the sero-prevalence of hepatitis B virus in Stieng tribe adults in Binhphuoc province, Vietnam?
- What are the factors related with hepatitis B infection in Stieng tribe adults in Binhphuoc province, Vietnam?

1.3 Hypothesis

- There are relationship between personal and socio-demographics characteristics and hepatitis B infection in Stieng tribe adults in Binhphuoc province, Vietnam.
- There are relationships between knowledge and hepatitis B infection in Stieng tribe adults in Binhphuoc province, Vietnam.
- There are relationships between health behavior and hepatitis B infection in Stieng tribe adults in Binhphuoc province, Vietnam.

1.4 Research Objectives

1.4.1 General Objectives

- To identify the sero-prevalence of hepatitis B virus in Stieng tribe adults in Binhphuoc province, Vietnam.
- To identify factors associated with hepatitis B infection in Stieng tribe adults in Binhphuoc province, Vietnam.

1.4.2 Specific Objectives

- To determine the sero-prevalence of hepatitis B virus in Stieng tribe adults in Binhphuoc province, Vietnam.
- To assess the level of the knowledge regarding hepatitis B in Stieng tribe adults in Binhphuoc province, Vietnam.
- To identify factors of personal and socio-demographics characteristics associated with hepatitis B infection in Stieng tribe adults in Binhphuoc province, Vietnam.
- To identify factors of knowledge associated with hepatitis B infection in Stieng tribe adults in Binhphuoc province, Vietnam.
- To identify factors of behavior associated with hepatitis B infection in Stieng tribe adults in Binhphuoc province, Vietnam.

1.5 Variables of the study

- Independent variables
 - Personal and socio-demographics characteristics
 - Knowledge on HBV
 - Health behavior on HBV
- Dependent variables
 - Hepatitis B infection

1.6 Operational definition

- According to World Health Organization defined hepatitis B is “a potentially life-threatening liver infection caused by the hepatitis B virus. It is a major global health problem and the most serious type of viral hepatitis. It can cause chronic liver disease and puts people at high risk of death from cirrhosis of the liver and liver cancer.”(WHO, 2008).
- According to Hepatitis B foundation defined that the person is infected with hepatitis B virus is the one who has a “positive” or “reactive” HBsAg test result. This can be an “acute” or a “chronic” infection and infected people can pass the virus on to other through their blood.
- Hepatitis B surface antigen (HBsAg) is a protein the surface of HBV and it can be detected in high levels in serum during acute or chronic HBV infection.

Knowledge on HBV: is the understanding about HBV infection that focused on the transmission of hepatitis B virus and the sequel of the disease in general population. The knowledge is adapted from the previous study (Taylor M. et al., 2005) that examined the knowledge on transmission and sequel of HBV.

Socio-demographics and personal characteristics:

- Gender: is defined as male and female.
- Age: this study survey in adult who age from 18 to 49 which is divided into 4 groups: 18-24, 25-34, 35-44 and 45-49.
- Marital status: is classified into married, single, widowed and divorced/separated
- Education level: is defined as the highest year of education of the participant. It can be divide into no education (can’t read and write), primary education, secondary education, and higher than secondary education.
- Occupation is defined as the current working status from which they earn income. It can divide into farmer, worker, housewife and others.
- Money to meet the need is classified into: not at all, a little, moderately, mostly, and completely.

- Family member is the people who are living in the same house. It is classified into small family (≤ 4 members), medium family (5 - 8 members) and large family (> 8 members).
- History of HBV infection or liver diseases is the participant who has been known from the health provider that they had HBV infection or liver diseases.
- History of family member with HBV infection or liver diseases is one of the participant's family members who have been known from the health provider that they had HVB infection or liver diseases.

Health behavior: according to the “Handbook of Health Behavior Research” (Goshman, 1997) defined health behavior as behavior patterns, actions and habits that relate to health maintenance, to health restoration and to health improvement. Behaviors within this definition include medical service usage (e.g., physician visits, vaccination, screening), compliance with medical regimens (e.g., dietary, diabetic, antihypertensive regimen) and self-directed health behaviors (e.g., diet, exercise, smoking, alcohol consumption).

- HBV vaccination: had done vaccinate against hepatitis B in the past.
- History of surgery: had done any surgery in the past.
- Receiving treatment for sexually transmitted infection (STIs): went to clinic or hospital for STIs treatment.
- Tattoo on the body
- Ear-nose-body piercing
- Visiting community barber for shaving or nail cutting: went to community barber for shaving at least one time
- Personal nail cutting: had and used their personal nail cutting.
- Sharing of razors: using razor with others
- Sharing toothbrush: using toothbrush with others.
- Reuse of syringes: using syringe after others.
- Multiple sexual partners: having sex with more than one partner

- Smoking: is classified into 3 status
 - Non-smoking: someone who has never smoked manufactured or hand rolled tobacco cigarettes at all or smoked less than one per day.
 - Current smoking: someone who currently smokes one or more manufactured or hand rolled tobacco cigarettes per day.
 - Ex-smoking: someone who does not now, but used to smoke one or more manufactured or hand rolled tobacco cigarettes per day.
- Drinking: According to Alcohol Use Disorders Identification Test (AUDIT) Alcohol consumption pattern divide rank into 4 levels. In this study adapt 3 first levels and add one more level of non-drinking.
 - Non-drinking: someone who has never drank
 - Light-drinker (low risk) : Men ≤ 2 Standard drink(Std)/day, Women ≤ 1 Std/day
 - Hazardous drinker: Men 4-6 Std/day, Women 2-4 Std/day
 - Harmful drinker: Men > 6 Std/day, Women > 4 Std/day

1.7 Conceptual Framework

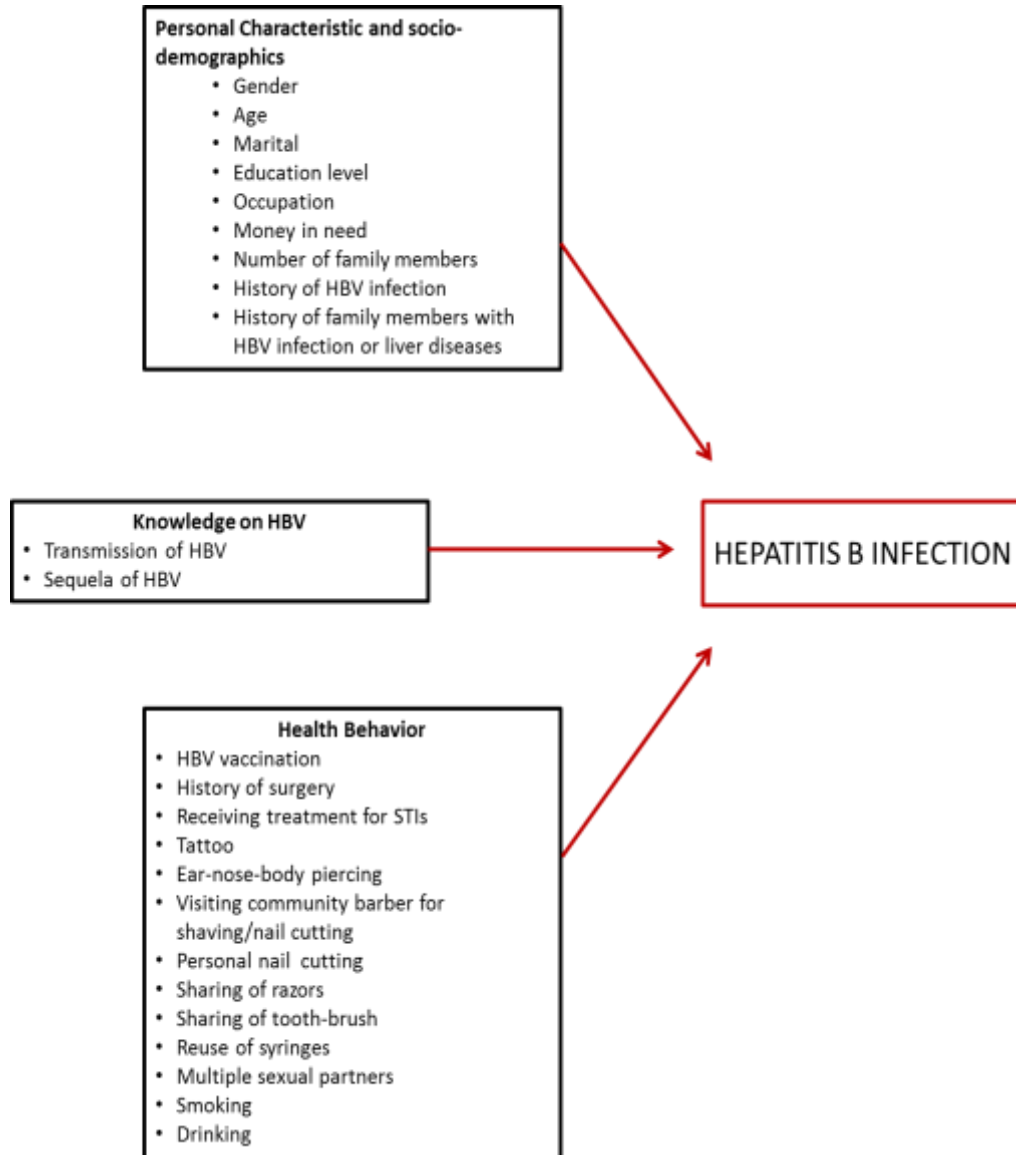


Figure 4. Conceptual framework

CHAPTER II

LITERATURE REVIEW

2.1 Hepatitis B definition

According to World Health Organization defined hepatitis B is “a potentially life-threatening liver infection caused by the hepatitis B virus. It is a major global health problem and the most serious type of viral hepatitis. It can cause chronic liver disease and puts people at high risk of death from cirrhosis of the liver and liver cancer.”(WHO, 2008).

HBV is transmitted through percutaneous or parenteral contact with infected blood, body fluids, and by sexual intercourse (Ganem D et al., 2001) (Gitlin N, 1997).

HBV is able to remain on any surface it comes into contact with for about a week, e.g. table-tops, razor blades, blood stains, without losing infectivity (Hollinger FB et al., 2001) (Robinson WS, 1995).

HBV does not cross the skin or the mucous membrane barrier. Some break in this barrier, which can be minimal and insignificant, is required for transmission (Robinson WS, 1995).

HBV is a large virus and does not cross the placenta, hence it cannot infect the fetus unless there have been breaks in the maternal-fetal barrier, e.g. via amniocentesis. Still, pregnant women who are infected with HBV can transmit their disease to their babies at birth. If not vaccinated at birth, many of these babies develop lifelong HBV infections, and many develop liver failure or liver cancer later in life (Mahoney FJ et al., 1999).

All persons who are hepatitis B surface antigen (HBsAg) positive are potentially infectious. The many millions of people around the world who become HBV carriers are a constant source of new infections for those who have never contracted the virus (Robinson WS, 1995).

Blood is infective many weeks before the onset of the first symptoms and throughout the acute phase of the disease. The infectivity of chronically

infected individuals varies from highly infectious (HBeAg positive) to often sparingly infectious (anti-HBe positive).

Hepatitis B is the only sexually transmitted infection for which there is a protective vaccine (Mahoney FJ et al., 1999).

The world can be divided into three areas where the prevalence of chronic HBV infection is: high (>8%), intermediate (2-8%), and low (<2%) (Mahoney FJ et al., 1999).

High endemicity areas include south-east Asia and the Pacific Basin (excluding Japan, Australia, and New Zealand), sub-Saharan Africa, the Amazon Basin, parts of the Middle East, the central Asian Republics, and some countries in eastern Europe. In these areas, about 70 to 90% of the population becomes HBV-infected before the age of 40, and 8 to 20% of people are HBV carriers (Hollinger FB et al., 2001).

There is no specific treatment for acute viral hepatitis B (Mahoney FJ et al., 1999).

Hepatitis B is a viral disease, and as such, antibiotics are of no value in the treatment of the infection.

The use of adrenocorticosteroids in the management of acute, uncomplicated hepatitis B is not indicated because they have no effect on the resolution of the underlying disease process, and may increase the rate of relapse. Early treatment of acute hepatitis B with steroids may result in the development of persistent infection. Corticosteroid therapy is only to be used in patients with chronic active hepatitis who are symptomatic, HBsAg negative, and who have severe histologic lesions in liver biopsies (Robinson WS, 1995).

The therapeutic effectiveness of interferon on the course and prognosis of acute hepatitis B is not known (Mahoney FJ et al., 1999).

A vaccine against hepatitis B has been available since 1982. Hepatitis B vaccine is 95% effective in preventing HBV infection and its chronic consequences, and is the first vaccine against a major human cancer.

2.2 Previous Study

The prevalence of HBV infection is highly in Asia, especially in Pacific Asia. Therefore, many researchers concern on this topic and many studies were conducted in Asia countries such as China, Bangladesh, Pakistan, South Korea ...etc. However, Epidemiological data on HBV infection in Vietnam at national level are limited. The literature review in this study based on previous studies in Vietnam and other countries to have a concept of risk factors associate with HBV infection. Moreover, there are not much study about knowledge on HBV in general population in Vietnam, especially there is no study about knowledge on HBV in Stieng tribal group.

2.2.1 Prevalence of hepatitis B infection

The cross-sectional study in 4000 adult in Northeast China found that 4.38% of the serum sample have HBsAg positive (Zhang, 2007). A provincial serosurvey was conducted in four cities also in China showed that the prevalence of HBsAg was 7.44% (Xiaoqing, 2012). In the cross-sectional study of Mehmet Ali Kurcer and Erkan Pehlivan in 646 participants in urban areas of Malatya, Turkey found that prevalence of HBsAg, were 6.0% (Kurcuer, 2002). A cross-sectional study was to evaluate the prevalence and risk factors for hepatitis B and C virus among 700 adults in a rural area of South Korea; in the finding of this study, the hepatitis B surface antigen was 4.4% (Shin, 2002).

According to the study from Van T.T. Nguyen, MD, (Nguyen VTT, 2010) the prevalence of HBsAg in healthy subject ranges from 5.7% to 24.7% depending on study setting and study subject (Table 1). (Hipgrave et al, 2003). A cross-section study in 837 participants in Thai Binh province, Vietnam showed that highly endemic hepatitis B infection in rural Vietnam. The prevalence of anti-HBc and HBsAg was 68.2% and 19.0% (Nguyen, 2007).

Other cross-sectional study in 383 persons in rural area (Linh Son village, Thai Binh province) in Vietnam found that 8.8% tested positive for HBsAg (Duong, 2009).

Table 1. Prevalence of HBV Infection in the General Population or Healthy Individuals in Vietnam

References	Study Sample (n)	Study Setting	Age Group ^a	HBsAg (%)	Anti-HBs (%)	Anti-HBc (%)
Tran, 1986 ¹⁹	General population (1304)	Hanoi city	0->60	11.4 ^b	—	—
Chau, 1995 ⁹	General population (1801)	Kien Giang province	3 mo-87 y	11.0 ^c	37.5	54.1
Nguyen et al, 2007 ⁸	General population (837)	Thai Binh	16-82	19.0	41.0	68.2
Le, 2007 ²⁰	General population (1146)	Lao Cai province	<5->18	11.0	—	—
Hipgrave et al, 2003 ³	General population (1579)	Thanh Hoa province	9 mo-40 y	16.8	—	49.5
Duong et al, 2009 ²¹	General population (383)	Thai Nguyen province	18-70	8.8	—	44.6
Kakumu et al, 1998 ²²	Healthy subjects (890)	Dalat city, Lam Dong province	2-81	5.7	—	—
Vu, 1998 ²³	Healthy subjects (817)	Thanh Hoa city	0-60	11.7	25.5	—
Nguyen et al, 2000 ²⁴	Healthy subjects (496)	Tay Nguyen	<15->45	12.9	—	—
Duong et al, 2000 ²⁵	Healthy subjects (220)	Ha Tinh province	NR	7.7	31.4	—
Tran et al, 2003 ²⁶	Healthy subjects (100)	Ho Chi Minh city	NR	10.0 ^c	—	—
La, 1995 ¹¹	General health check-up (2573)	Ho Chi Minh city and Ben Tre town	10->50	13.3	30.9	74.7
Nguyen et al, 1992 ²⁷	Healthy subjects (675)	Hanoi city	18-40	24.7	—	—
Vien et al, 1996 ⁴	Factory workers (329)	Nha Trang city	NR	18.2	37.1	—
Cao et al, 2003 ²⁶	Factory workers (2400)	Hai Duong province	16-60	12.0	—	—
Doan, 1996 ⁵	Military students (970)	Hanoi	18-28	21.8	39.3	—
Nguyen et al, 2000 ²⁹	University students (140)	Tay Nguyen province	NR	14.3	—	—
Nguyen, 2003 ⁶	Hmong students in a boarding school (115)	Thai Nguyen province	15-19	17.4	—	—
Nguyen, 2004 ³⁰	Hmong students in a boarding school (115)	Hoa Binh province	15-19	19.1 (males) 15.4 (female)	—	—
Katellaris et al, 1995 ³¹	Children in rural (87)	Dong Nai province	2-12	19.5	—	—
Nguyen et al, 2002 ³²	School children (286)	Thai Binh province	9-15	12.9	—	—
Nguyen et al, 2007 ⁸	General population	Thai Binh province	16-82	19.0	41.0	68.2
Cao, 1995 ³³	Pregnant women (1320)	Hanoi city	NR	13.0	—	—

Source: Citation from article: "Hepatitis B Infection in Vietnam: Current Issue and Future Challenges". (Nguyen VTT, 2010).

2.2.2 Factors associated with hepatitis B infection

The cross-sectional study in 4000 adult in Northeast China found that HBsAg was significantly associated with smoking, private small business, gender (male), personal history of vaccination, family history of HBV and age. For age, people in the 18-29 age group had greater likelihood of having been infected by hepatitis B (HBsAg+) (Zhang, 2007).

Other previous cross-sectional study in Bangladesh on 2000 participants, age from 0 to 60 years show that the participants with HBsAg positive associated significantly among the family members (OR 1.5; $p < 0.001$), associate with married people (OR 2.27, $p < 0.001$), associate with gender that more in female than male (OR 5.75; $p < 0.001$), associate with visiting unregistered health-care providers (OR 1.73; $p = 0.008$), associate with receiving treatment for sexually transmitted diseases (STD) (OR 1.79; $p = 0.001$), ear-nose-body piercing in females (OR 4.97; $p < 0.001$) and visiting community barber for shaving in males (OR 3.77; $p < 0.001$) (Ashraf, 2010).

In the cross-sectional study of Mehmet Ali Kurcer and Erkan Pehlivan in 646 participants in urban areas of Malatya, Turkey found that HBV infection was independently associated with age group of 21 years and older (OR=3.7; 95% CI= 1.884-7.494), farmers and laborers (OR=2.8%; 95% CI= 1.042-7.953), multiple sexual partners (OR=2.1; 95% CI= 1.574-8.168) (Kurcuer, 2002).

A serosurvey was conducted in four cities in China found that older age was a risk factor for HBsAg infection among children younger than 15 years. Among adults 15-59 years old, the risk factors were gender male more than female, a history of surgical operations, at least one HBsAg-positive family member, and non-vaccination. For adults older than 59 years, the risk factor was a blood transfusion history (Xiaoqing, 2012).

The study in two districts of Thanhhoa province with total 1,579 participants from four age groups and the finding found that the prevalence of HBsAg rates were different groups 12.5% in infants, 18.4% in children, 20.5% in adolescents and 18.8% in adults (figure.3), and prevalence of HBsAg higher in male adult (19.5%) than in female adult (15.8%) (Hipgrave et al, 2003).

A cross-section study in 837 participants in Thai Binh province, Vietnam showed that highly endemic hepatitis B infection in rural Vietnam. The factor associated with HBV infection were age 60 years or older (OR=3.82; 95% CI= 1.355-10.80; p=0.01), residence in Vu Thu district (OR=3.00; 95% CI= 2.16-4.17; p<0.0001), hospital admission (OR=2.34; 95% CI= 1.33-4.13; p=0.003), household contact with a person with liver disease (OR=2.13; 95% CI= 1.29-3.52; p=0.003), reuse of syringes (OR=1.81; 95% CI= 1.25-2.62; p=0.002) and sharing of razors (OR=1.69; 95% CI= 1.03-2.79; p=0.04) (Nguyen, 2007).

Other cross-sectional study in 383 persons in rural area (Linh Son village, Thai Binh province) in Vietnam found risk factors for HBV infection: male gender (OR=1.7; 95% CI= 1.3-1.7), age greater than 40 (OR=2.1; 95% CI= 1.4-3.3), a low level of education (OR=1.7; 95% CI= 1.0-2.7) and a history of surgery (OR=1.9; 95% CI= 1.0-3.5) (Duong, 2009).

2.2.3 Knowledge on hepatitis B

A cross-sectional study about knowledge of HBV among Vietnamese American man and women in United State, public in 2005 found that 81% of the participant had heard about HBV and a majority of the participants knew that HBV can be transmitted during sexual intercourse (71% of men, 68% of women), by sharing toothbrushes (67% of men, 77% of women), and by sharing razors (59% of men, 67% of women). Less than one-half knew that hepatitis B is not spread by eating food prepared by an infected person (46% of men, 27% of women), nor by coughing (39% of men, 25% of women). Men were more likely than women to know that hepatitis B is not spread by eating food that has been prepared by an infected person (p < 0.001), coughing (p <

0.001), and holding hands ($p = 0.035$); and HBV can be spread by someone that looks and feels healthy ($p = 0.019$). In contrast, women were more likely to know that HBV can be spread by eating food that has been pre-chewed by an infected person ($p = 0.001$), sharing toothbrushes ($p = 0.003$), and sharing razors ($p = 0.014$) (Taylor M, 2005).

A cross-sectional study about knowledge of HBV among the Cambodian, one of the ethnic groups in The United States was also conducted by Victory M. Taylor. In the finding of this study with the sample size was 320 participants, about 56% of the responder had heard about HBV infection. Only 1.6% responder knew hepatitis B easily spread than AIDS, 23.1% answered correctly that hepatitis B can spread by “someone is infected with hepatitis B but they look healthy”, 23.5% answer that hepatitis B cannot spread by eating food that prepared from an infected person. Two third of the responder (69.3%) knew that hepatitis B can spread by sharing toothbrush with an infected person, and 67.0% knew that hepatitis B can spread by eating food that has been prechewed by an infected person. Only 10.3% of the responder knew that hepatitis B cannot be spread by being coughed on by an infected person. Nearly half of them (47.5%) knew that hepatitis B can spread by sexual intercourse with an infected person. 69.0% of the responder answered that hepatitis B cannot be spread by holding hand with an infected person. Only 24.4% of them knew hepatitis B can be infected for life, and 14.7% knew that hepatitis cannot be cure. Half of the responders knew hepatitis B can cause liver cancer and 72.4% knew someone can die from hepatitis B.

Other cross-sectional study in 2005 about HBV knowledge and practice among Chinese immigrant to America show that the participant knew that HBV can spread during childbirth, during sexual intercourse, and by sharing razors were 70%, 50% and 55%. Less than one-quarter of the responder knew that HBV cannot be spread by eating food that was prepared by an infected person (23%) (M. Taylor, 2005).

CHAPTER III

RESEARCH METHODOLOGY

3.1 Research Design

This is a cross-sectional study to assess the sero-prevalence of hepatitis B virus and identify factors associated with hepatitis B in Stieng tribe adults in Binhphuoc province, Vietnam.

3.2 Study Area

The study area is in Binhphuoc province, Vietnam where the Stieng tribe adults is living.

3.3 Study Population

Study population is the Stieng tribe adults both male and female who are living in Binhphuoc province, Vietnam. The researcher determined the inclusion criteria as follows:

- Aged 18 to 49 years-old
- No hearing problem and mental disorder
- Willing to participate in this study

3.4 Sampling Technique

Multi-stage Sampling is used in this study.

- **Step 1**: In Binhphuoc province, there are 10 districts but the Stieng tribe does not live in all. Therefore, we selected 3 districts have largest Stieng population. In 3 districts, we selected randomly 1 district by writing the names of each district in each piece of paper and pick-up 1 name.
- **Step 2**: In this district, there are 18 villages. We selected randomly 1 village by writing the names of each village in each piece of paper and pick-up 1 name.

- **Step 3:** In this village, there are 7 hamlets in 10 hamlets that the Stieng are living. We selected randomly 3 hamlets from 7 hamlets by writing the names of each hamlet in each piece of paper and pick-up 3 names in one time.
- **Step 4:** In each hamlet, there is the name lists of each household (can ask permission and borrow from hamlet leader). In 3 hamlets, there are 734 adults with age from 18 to 49. In the first hamlet, we selected the participant with odd numbers in the list from the first number up to the last number to make sure that every villager with the odd number has the same probability to be selected. We also applied this method to the second hamlet but the even numbers was selected from the list. For the third hamlet, participants are selected with the same method as the first hamlet. We select randomly and equally 367 participant in 3 hamlets. It means, according to the number of the people of each hamlet, we calculated the probability (total sample size divide for total number of household, probability was nearly 0.5) that each person have a same chance to be selected.
- **Step 5:** After selecting 367 people, the study team sent invitation card to each of them and asked for their participation. (If that person won't be at home at that time, we come back to their house later and if they still won't be at home or does not want to participate, we select the person who is next to him or her in the list to replace.)

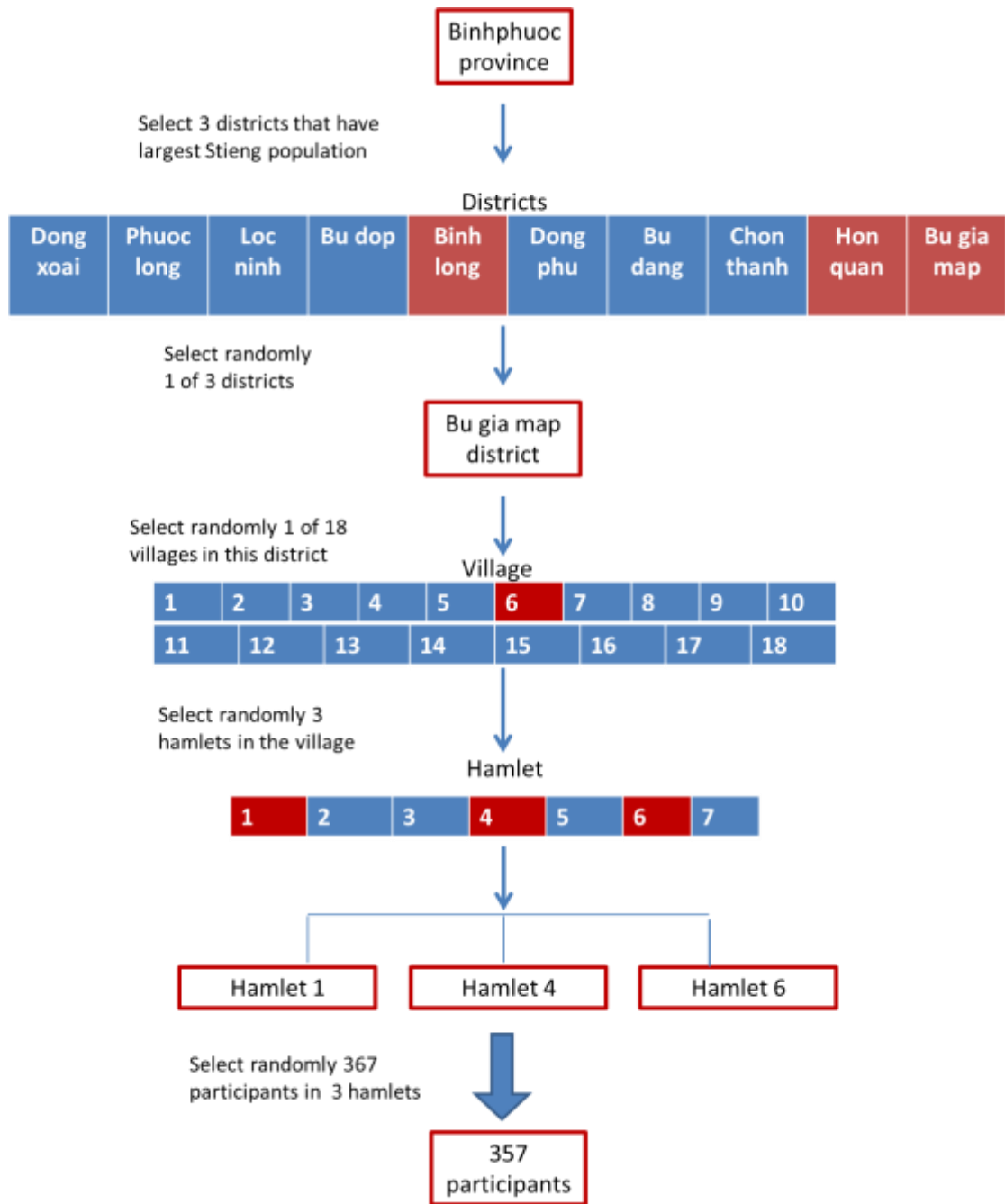


Figure 5. Sampling technique

3.5 Sample and Sample size

In this study, the sample size is calculated by formula:

$$n = \frac{Z^2 \times p(1-p)}{E^2}$$

Description:

n = required sample size

Z = confidence level at 95% (standard value of 1.96)

p = the estimated proportion of an attribute disease that is present in the population. According to a previous study (Nguyen VT-T, 2007), the prevalence of HBV infection (HBsAg positive) in rural area was 19%, and to be ensure for this study in Stieng tribal population who are vulnerable; therefore we increase p to 0.3.

E = margin of error at 5% (standard value of 0.05)

Calculation:

$$n = \frac{1.96^2 \times .3(1-.3)}{.05^2}$$

$$n = 322.69 \sim 323$$

Based on this formula, the sample size was as follows:

$$n = 323$$

Also, an additional 10% was needed in case of loss of sample. Therefore, the total number of sample are **n = 356**

3.6 Measurement Tools

The measurement tool for sero-prevalence is blood drawing, and handling of serum sample. Serological testing: Diagnostic Kit for Hepatitis B Surface Antigen (Colloidal Gold) which is also used in laboratory of Institute of Hygiene and Public Health.

- Sensitivity: > 99.0%
- Specificity: 99.7%

Approximately 4 ml of blood are collected from the antecubital veins by syringe under aseptic condition of the participant by technicians from Institute of Hygiene and Public Health. Blood sample are kept in a cold container (2 – 8⁰C) and transfer to Laboratory of the Institute of Hygiene and Public Health within 24 hours by technicians. Present HBV infection marker is defined by result positive for HBV surface antigen (HBsAg).

Building the questionnaire for data collection from the target population consisted 3 parts and was interviewed by interview team who are Stieng, fluent in Vietnamese and Stieng languages and graduated at least from secondary school.

Part1: Personal and socio-demographics characteristics

- Age
- Gender
- Marital
- Education level
- Occupation
- Money in need
- Family members
- History of HBV infection or liver disease
- History of family members with HBV infection or liver diseases

Part 2: Knowledge on HBV

- Transmission of HBV
- Sequela of HBV

The questionnaire is adapted from previous study of Taylor M (2005) about the knowledge on HBV infection among the Vietnamese American in the United State and will be translated into Vietnamese and tested for the reliability (Kuder-Richardson = 0.85) in the same Stieng adult tribe in Binhphuoc province but different district. Moreover, the questionnaire was consulted by three experts in the College of Public Health Sciences, Chulalongkorn University.

Knowledge of HBV: the correct answer will be given 1 score and 0 score for wrong answer. It was classified into 3 levels:

- | | |
|-------------------------|----------------|
| • High level (> 50%) | : 7 – 13 score |
| • Low level (< 50%) | : 1 – 6 score |
| • Do not have knowledge | : 0 score |

Part 2: Health behavior

- History of HBV vaccination
- History of surgery
- Receiving treatment for sexually transmitted infection (STIs)
- Tattoo on the body
- Ear-nose-body piercing
- Visiting community barber for shaving or nail cutting
- Non-personal nail clipper
- Multiple sexual partners
- Sharing of razors
- Sharing toothbrush
- Reuse of syringes
- Drinking
- Smoking

3.7 Data Collection

- After receiving the proposal approval from ethical committee of Hanoi school of Public Health, the study team started data collection.
- The study team consisted of five technicians who are working in laboratory and clinic of the Institute of Hygiene and Public Health in order to standardize the data collection of blood drawing, and handling of serum samples. For interview team, we choose the Stieng people who are graduated at least from secondary-school and fluent in Vietnamese and Stieng languages and trained interview skill.
- The study team at first went to Health Prevention Center of Bu Gia Map district to present the purpose and objective of the study to director. After that, the director introduced the team to clinic leader in the village. The clinic leader introduced the team to three hamlet leaders.
- The study team introduced and explained about this study including blood drawing and testing to the hamlet leaders. After setting up the date and time, the leaders introduced the team to the villagers. The team member went to each household to send the invitation card and participant information sheet to the selected people. In the invitation card, there were name, year of birth of the participants and together with time, date and place. The participants were explained about the study from the information sheet and asked to bring invitation card when they come to the community house.
- When the participants came to data collection place (community house), firstly they showed invitation card at the registration table and signed into the consent form. The research team recoded participant's name and replaced their name by code into the questionnaire. Secondly after registration, participant moved to next table to be drawn blood and the label on blood tube recoded by the code on the questionnaire. When finish drawing blood, participants were invited to another table and were interviewed by interviewer who is same sex.

Blood drawing:

- Prepare an appropriate location: using the community house.
- Follow the instruction of infection prevention and control practices according to WHO:
 - Do carry out hand hygiene (use soap and water or alcohol rub), and wash carefully, including wrists and spaces between the fingers for at least 30 seconds.
 - Do use one pair of non-sterile gloves per procedure.
 - Do use a single-use device for blood sampling and drawing.
 - Do disinfect the skin at the venepuncture site.
 - Do discard the used device (a needle and syringe is a single unit) immediately into a robust sharps container.
- Participant was drawn 4 ml (cc) of blood from the vein under the antecubital fossa to test for hepatitis B infection by technician.
- The study team will prepared snack and water for participants. Data collected within 2 days for questionnaire and blood drawing in 3 hamlets (26th – 27th February, 2012). After the participants were interviewed and drawn blood, they were given gift (a small towel and a nail clipper) to thank you for their participation.

3.8 Data Analysis

- Statistical analyses are performed using Statistical Package for Social Sciences (SPSS) software version.17.
- The analysis was carried out at two parts: descriptive, association analysis. Descriptive statistics of socio-demographic variables and other characteristics of the sample population were computed. Mean and SD was calculated for quantitative variables and frequency and percentage for categorical variables. Percentage was used to describe the prevalence. Association between independent variables and outcome were assessed using Chi-square or Fisher exact tests.

3.9 Ethical Consideration

- This study were be done by blood drawing and interviewing the Stieng tribe adults in the community by the willing participation.
- The researcher only clarified the objective of the study.
- The research result covered all of the Stieng tribe adult and the benefit of this study is to improve prevention HBV through a appreciate strategy in the Stieng tribal community.
- The participant had blood test with free charge and the result was shared to them.
- The participants were provided snack and water during the time they come to the clinic for blood drawing and answer the questionnaire.
- All the information relates to participant are destroyed after finish the research project and the blood sample were destroyed after get the result of blood test.
- The participants with positive HBsAg were be informed and provided with appropriate information on the prevention of spread infection to others, and refer them to the nearest public health care facilities.
- The study consider the risk reduction in blood drawing according to WHO instruction:

Risk	Risk reduction strategy
Infection at blood sampling site	<ul style="list-style-type: none"> – Perform hygiene – Clean patient's skin with 70% isopropyl alcohol and allow to dry – Use sterile needle and syringe removed from the packaging just before use
Pain at blood sampling site	<ul style="list-style-type: none"> – Well-trained person should take the blood sample – Use needle smaller gauge than the selected vein
Haematoma or thrombus	<ul style="list-style-type: none"> – Enter vessel at an angle of 30 degrees or less – Use gauge of needle smaller than the vein – Apply pressure to a straight arm for 3-5 minutes after drawing blood
Extensive bleeding	<ul style="list-style-type: none"> – Use a gauge of needle smaller than the vein
Vasovagal reaction Syncope, fainting	<ul style="list-style-type: none"> – Reduce anxiety

3.10 Limitation

There was not much study on this group of people (Stieng tribe), especially qualitative study relate to hepatitis B. Therefore, the reference for the study on the questionnaire was limited in term of knowledge, health behavior, social, cultural,...etc.

CHAPTER IV

RESEARCH RESULTS

This chapter presents the result of the study under the following parts:

1. Part 1: Descriptive (using frequency, percentage, mean, and standard deviation)
 - Sero-prevalence of hepatitis B virus in Stieng tribe adults in Binhphuoc province, Vietnam.
 - Personal and socio-demographics characteristics and prevalence of HBV infection of the Stieng tribe adults in Binhphuoc province, Vietnam.
 - Knowledge on Hepatitis B of the Stieng tribe adults in Binhphuoc province, Vietnam.
 - Health behavior of the Stieng tribe adults in Binhphuoc province, Vietnam.
2. Part 2: Analysis (using Chi-square to test the association)
 - Association between personal and socio-demographics characteristics and Hepatitis B infection among the Stieng tribe adults in Binhphuoc province, Vietnam.
 - Association between levels of knowledge and Hepatitis B among the Stieng tribe adults in Binhphuoc province, Vietnam.
 - Association between health behavior and Hepatitis B infection among the Stieng tribe adults in Binhphuoc province, Vietnam.

4.1 Sero-prevalence of hepatitis B virus in Stieng tribe adults in Binhphuoc province, Vietnam.

The result of the blood test showed that 58 (16.2%) of the participants had HBsAg positive in 357 participants.

4.2 Personal and socio-demographics characteristics of Stieng tribe adults in Binhphuoc province, Vietnam.

A total of 357 Stieng tribe adults with age from 18 to 49 participated in this study. The mean age of the participants was 32.4; there was 28.3% of the group from 18 to 24 years-old, 30.8% of the group from 25 to 34 years-old and the group from 35 to 44 years-old were 24.1%, and only 16.8% from 45 to 49 years-old. Female (58%) were more than male (42%). Nearly half of the participants cannot read and write (45.7%), 31.7% studied in primary school and only 13.7% the participants studied in secondary school, and very few studied higher than secondary school (9%). More than half of the participants were married (66.4%), and 28% were single, and very few were widowed (18%) and divorced (0.6%). The majority of their occupations were farmer (93.3%), very few of them were worker (1.4%), housewife (1.7%), and student (3.6%). For the income, about 37% did not have enough money to meet their need or just a little (26.1%); 34.7% have moderately of money to meet the need and small number were able to meet the need mostly (1.4%) or completely (0.8). The mean of the number of people living in the house were 6.31, the participants had more than 4 members in the house (74.5%). Most of the people did not know themselves or family member had HBV infection or liver disease in the past or not (89.1%), (84.6%).

Table 2: Personal and socio-demographics characteristics of subjects.

Characteristic	Frequency	Percentage
Gender		
Male	150	42.0
Female	207	58.0
Age (Mean±SD)	(32.42 ±9.75)	
18 - 24	101	28.3
25 - 34	110	30.8
35 - 44	86	24.1
45 - 49	60	16.8
Education		
Cannot read and write	163	45.7
Primary	113	31.7
Secondary	49	13.7
> Secondary	32	9.0
Marital status		
Single	100	28.0
Married	237	66.4
Divorced/Separated	2	0.6
Widowed	18	5.0
Occupation		
Farmer	333	93.3
Worker	5	1.4
Housewife	6	1.7
Student	13	3.6

Table 2: Personal and socio-demographics characteristics of subjects.
(Continued)

Characteristic	Frequency	Percentage
Money to meet the need		
Not at all	132	37.0
A little	93	26.1
Moderately	124	34.7
Mostly	5	1.4
Completely	3	0.8
Family member		
Mean \pm SD	6.31_ \pm 2.62	
Min_Max	2_ 20	
Small (\leq 4)	91	25.5
Medium (5 – 8)	219	61.3
Large ($>$ 8)	47	13.2
History of HBV infection		
Yes	32	9.0
No	7	2.0
Don't know	318	89.1
History of family member with HBV infection		
Yes	52	14.6
No	3	0.8
Don't know	302	84.6

4.3 Knowledge on Hepatitis B of the Stieng tribe adults in Binhphuoc province, Vietnam.

The participants were asked about the transmission and sequel of HBV within 13 questions and more than half of them answered that have never heard about Hepatitis B (52.4%). Among the participants have heard about hepatitis B, only 24.7% knew that “HBV is more easily spread from person to person than AIDS” and 40.6% knew HBV can spread from an infected person but look and feel healthy. Very few of the participants knew that HBV cannot spread by eating food prepared by an infected person (13.5%). 57.6% and 54.7% answered that HBV can spread by sharing a toothbrush with an infected person and eating food that has been prechewed by an infected person. HBV cannot be spread by being coughed by an infected person were answered correctly only 10.0% and 44.7% of the participants answered that HBV can be spread by having sexual intercourse with an infected person. 38.8% of the participants knew that HBV cannot be spread by holding hands with an infected person. For the sequela of the HBV, 81.2% knew that it can be infected for life and can cause liver cancer (76.5%). Someone can die from hepatitis B was answered from 85.3% of the participants and only 5.3% of them knew that hepatitis B disease cannot be cured completely.

Table 3: Knowledge on Hepatitis B of the subject

Knowledge on HBV	Correct answer	Frequency	Percentage
Ever heard about HBV infection (n=357)	Yes	170	47.6
Hepatitis B is more easily spread from person to person than AIDS. (n=170)	Yes	42	24.7
Someone is infected with hepatitis B but they look and feel healthy, that person can spread hepatitis B. (n=170)	Yes	69	40.6
Hepatitis B can be spread by eating food prepared by an infected person. (n=170)	No	23	13.5
Hepatitis B can be spread by sharing a toothbrush with an infected person. (n=170)	Yes	98	57.6
Hepatitis B can be spread by eating food that has been prechewed by an infected person. (n=170)	Yes	93	54.7
Hepatitis B can be spread by being coughed on by an infected person. (n=170)	No	17	10.0
Hepatitis B can be spread by having sexual intercourse with an infected person. (n=170)	Yes	76	44.7
Hepatitis B can be spread by holding hands with an infected person. (n=170)	No	66	38.8
People with hepatitis B can be infected for life. (n=170)	Yes	138	81.2
Hepatitis B can cause liver cancer. (n=170)	Yes	130	76.5
Someone can die from hepatitis B. (n=170)	Yes	145	85.3
Hepatitis B disease can be cured. (n=170)	No	9	5.3

The knowledge score were counted as “1” for correct answer and “0” for wrong answer or answer “don’t know” for each question. The highest knowledge score of the participant was 12 score and the lowest was 0 (including all the participants who had never heard about Hepatitis B), the mean of the knowledge score was 3 and standard deviation was 3.55. From the knowledge score, it divided into 3 levels as the first is 0 score (52.4%), the second one is from 1 to 6 scores (23%) and the last is from 7 to 12 score (24.6%).

Table 4: Knowledge level on Hepatitis B of the subject

Knowledge level (n=357)	Frequency	Percentage
0 score	187	52.4
1 - 6 score	82	23.0
> 6 score	88	24.6
Knowledge score		
Min – Max	0 - 12	
Mean	3	
Std.Deviation	±3.55	

4.4 Health behavior of the Stieng tribe adults in Binhphuoc province, Vietnam

There were 13 items the check health behavior of the participants. The participants have been vaccinated for HBV were low only 3.1% and 17.1% have been done in surgery. 15.4% received sexual transmitted infection treatment among the participants. 8.7% of them had tattoo on the body and 58% piercing ear. Visiting community barber for shaving or nail cutting were 53.5% and 66.1% do not have personal nail cutting. 30% and 35.3% of the participants answered that they used to share the razor and toothbrush with other. 2.2% answered that they had been reused syringe and 4.5% had sex with other aside from their partner. For drinking, high percentage of non-drinking among the participants (72.3%), but beside that the once who drink were mostly harmful-drinker (27.5%) and 1.7% of hazardous-drinker. There were 72.3% of the participants were non-smoking, 26.6% were current smoker and only 1.1% was ex-smoker.

Table 5: Health behavior of the subject

Health behavior	Answer "Yes"	
	Frequency (n= 357)	Percentage
HBV vaccination	11	3.1
Ever done surgery	61	17.1
STIs treatment	55	15.4
Tattoo on the body	31	8.7
Piercing ear, nose or body	207	58.0
Visiting community barber	191	53.5
Non-personal nail clipper	236	66.1
Sharing razor	107	30.0
Sharing toothbrush	126	35.3
Reusing syringe	8	2.2
Multiple sexual partner	16	4.5
Drinking		
Non-drinking	259	72.5
Light-drinker	3	0.8
Hazardous-drinker	6	1.7
Harmful-drinker	89	27.5
Smoking		
Non-smoking	258	72.3
Smoking	95	26.6
Ex-smoking	4	1.1

4.5 Association between HBsAg test result and personal and socio-demographics characteristics of the Stieng tribe adults in Binhphuoc province, Vietnam.

Association between characteristics socio-demographic factors and Hepatitis B infection among the Stieng tribe adults was done using Pearson's Chi square. There was significant association between gender and hepatitis B infection (P-value = 0.012), male had the prevalence of HBsAg positive (22%) more than female (12.1%). The age group from 25 to 34 years-old had the highest prevalence of HBsAg positive but this association was insignificant between age and hepatitis B infection. There was different of the prevalence of hepatitis B infection between education less than secondary level (15.1%) and the higher education (28.1%), but this difference was not significant association between them (P-value = 0.056). There was insignificant association of marital status and hepatitis B (P-value = 0.723). The prevalence of HBsAg positive in the farmer group (16.8%) was higher than in non-farmer group (8.3%), but this association was insignificant. There was not significant association between having enough money to meet the need with prevalence of HBsAg positive (P-value = 0.477). There was difference of the prevalence of HBsAg positive in the group had history of hepatitis B infection or liver diseases (25%) with the group had not (15.4%), however this difference was insignificant association (P-value = 0.159). For the group with family member had history of hepatitis B infection or liver diseases had higher prevalence of HBsAg positive (19.2%) than the group with non-family member had history of hepatitis B infection or liver diseases (15.7%), but it was not significant association (P-value = 0.528).

Table 6: Association between HBsAg test result and characteristics

Characteristics	HBsAg test		Chi-square	P-value
	Negative	Positive		
Gender				
Male	117 (78.0)	33 (22.0)	6.29	0.012
Female	182 (87.9)	25 (12.1)		
Age				
18 – 24	84 (83.2)	17 (16.8)	4.80	0.188
25 – 34	86 (78.2)	24 (21.8)		
35 – 44	76 (88.4)	10 (11.6)		
45 – 49	53 (88.3)	7 (11.7)		
Education				
< Secondary	276 (84.9)	49 (15.1)	3.64	0.056
≥ Secondary	23 (71.9)	9 (28.1)		
Marital status				
Single	84 (84)	16 (16)	0.64	0.723
Married	197 (83.1)	40 (16.9)		
Divorced/Widowed	18 (90.0)	2 (10.0)		
Occupation				
Non-Farmer	22 (91.7)	2 (8.3)		0.394*
Farmer	277 (83.2)	56 (16.8)		
Money to meet the need				
Not at all	111 (84.1)	21 (15.9)	1.478	0.477
A little	81 (87.1)	12 (12.9)		
≥ Moderately	107 (81.1)	25 (18.9)		
Family member				
Small (≤ 4)	73 (80.2)	18 (19.8)	1.93	0.380
Medium (5 - 8)	184 (80.0)	35 (16.0)		
Large (> 8)	42 (89.4)	5 (10.6)		

*Fisher's exact test

Table 6: Association between HBsAg test result and characteristics. (Continue)

Characteristics	HBsAg test		Chi-square	P-value
	Negative	Positive		
History of HBV infection or liver disease				
Yes	24 (75.0)	8 (25.0)	1.97	0.159
No/ don't know	275 (84.6)	50 (15.4)		
History of family member with HBV infection or liver disease				
Yes	42 (80.8)	10 (19.2)	0.39	0.528
No/ don't know	257 (84.3)	48 (15.7)		

4.6 Association between HBsAg test result and level of knowledge of the Stieng tribe adults in Binhphuoc province, Vietnam.

The association between knowledge levels and Hepatitis B infection among the Stieng tribe adults was done using Pearson's Chi square. Although Hepatitis B infection rate was higher in the group that had 1 – 6 score (24.4%) than another group had 0 score (13.9%) and group had >6 score (13.6%), this difference was not statistically significant between knowledge levels and Hepatitis B infection (P-value = 0.075 >0.05).

Table 7: Association between HBsAg test result and level of knowledge

Level of Knowledge	HBsAg test		Chi-square	P-value
	Negative	Positive		
0 score	161 (86.1)	26 (13.9)	5.192	0.075
1-6 score	62 (75.6)	20 (24.4)		
> 6 score	76 (86.4)	12 (13.6)		

4.7 Association between HBsAg test result and health behavior of the Stieng tribe adults in Binhphuoc province, Vietnam.

There was no association significant between Hepatitis B infection (HBsAg positive) with health behavior factor (P-value >0.05) as:

- Non-of the people had done HBV vaccination in the past had HBsAg positive.
- The prevalence of HBsAg positive between the group had done surgery in the past and the group had not was similar (16.4% and 16.2%).
- The people had been experience on sexual transmitted infection treatment had lower prevalence of HBsAg (10.9%) compare with the group had not experience (17.2%).
- The group of people with tattoo on the body had higher prevalence of HBsAg positive (25.8%) than the one was not (15.3%).
- The prevalence of HBsAg positive between the group had been shared their razor with other and the group had not was similar (16.8% and 16.0%).
- The group of people with reusing syringe with other had higher prevalence of HBsAg positive (25.0%) than the one was not (16.0%).
- The people had been experience of piercing ear or sharing toothbrush with other had lower prevalence of HBsAg (13% and 14.3%) compare with the group had not experience (20.7% and 17.3%).
- The prevalence of HBsAg positive in the group of non-drinking (14.3%) was lower comparing with the group of light drinking (23.2%) and heavy drinking (19.0%)
- The prevalence of HBsAg positive in the group of non-smoking (20.0%) was higher comparing with the groups of current/ex-smoking (14.9%).

There was association significant between Hepatitis B infection with visiting community barber (P-value = 0.01). The rate of the Hepatitis B infection among the people who had been visiting community barber (20.9%) was higher than the people had not (10.8%).

There was association significant between Hepatitis B infection with non-personal nail clipper (P-value = 0.011) that the group had and used their own personal clipper had higher prevalence of HBsAg positive (23.1%) than the one had not (12.7%).

Multiple sexual partner was one of the health behavior factor that strong association significant with Hepatitis B infection (P-value= 0.002). The rate of the Hepatitis B infection among the people who had sex with multiple partners (43.8%) was higher than the people had not (15%).

Table 8: Association between HBsAg test result and health behavior

Health Behavior	HBsAg test		Chi-square	P-value
	Negative	Positive		
HBV vaccination				
Yes	11 (100)	0		0.138*
No	288 (83.2)	58 (16.8)		
Ever done surgery				
Yes	51 (83.6)	10 (16.4)	0.001	0.973
No	248 (83.8)	48 (16.2)		
STIs treatment				
Yes	49 (89.1)	6 (10.9)	1.36	0.243
No	250 (82.8)	52 (17.2)		
Tattoo on the body				
Yes	23 (74.2)	8 (25.8)	2.28	0.131
No	276 (84.7)	50 (15.3)		
Piercing ear, nose or body				
Yes	180 (87.0)	27 (13.0)	3.71	0.054
No	119 (79.3)	31 (20.7)		
Visiting community barber				
Yes	151 (79.1)	40 (20.9)	6.65	0.01
No	148 (89.2)	18 (10.8)		

*Fisher's exact test

Table 8: Association between HBsAg test result and health behavior

Health Behavior	HBsAg test		Chi-square	P-value
	Negative	Positive		
Personal nail clipper				
Yes	93 (76.9)	28 (23.1)	6.39	0.011
No	206 (87.3)	30 (12.7)		
Sharing razor				
Yes	89 (83.2)	18 (16.8)	0.037	0.847
No	210 (84.0)	40 (16.0)		
Sharing toothbrush				
Yes	108 (85.7)	18 (14.3)	0.55	0.458
No	191 (82.7)	40 (17.3)		
Reusing syringe				
Yes	6 (75.0)	2 (25.0)		0.621*
No	293 (84.0)	56 (16.0)		
Multiple sexual partner				
Yes	9 (56.2)	7 (43.8)	9.312	0.002
No	290 (85.0)	51 (15.0)		
Drinking				
Non-drinking	222 (85.7)	37 (14.3)	2.972	0.226
Light-drinker (≥ 100 ml and ≤ 500 ml)	43 (76.8)	13 (23.2)		
Heavy-drinker (>500ml)	34 (81.0)	8 (19.0)		
Smoking				
Non-smoking	219 (84.9)	39 (15.1)	0.873	0.350
Current/ex-smoking	80 (80.8)	19 (19.2)		

*Fisher's exact test

CHAPTER V

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1 Discussion

This study aimed to determine the prevalence and explore the relationship between characteristics socio-demographic factors, level of knowledge, health behavior relate to hepatitis B infection among the Stieng tribe adult in Binhphuoc province, Vietnam. Data was collected using questionnaire by interview face to face and blood test in Binhphuoc province.

The result of this study will be discussed under the following parts:

- Prevalence of hepatitis B infection among study population
- Personal and socio-demographics characteristics of the subject
- Knowledge on hepatitis B of the subject
- Health behavior of the subject
- Association between personal and socio-demographics characteristics factors and hepatitis B infection of the subject.
- Association between level of knowledge and hepatitis B infection of the subject.
- Association between health behavior factors and hepatitis B infection of the subject.

5.1.1 Prevalence of hepatitis B infection among study population

A total 357 people participated in this study. They were drawn blood and tested for the prevalence of hepatitis B surface antigen. The result of blood test showed that 58 (16.2%) participants had HBsAg positive. This prevalence of HBsAg positive was very much higher than the prevalence of HBsAg positive (4.38%) in the study of 4,000 adults in Northeast China (Zhang, 2011), and 4.4% prevalence of HBsAg positive in the study of 700 adults in a rural area of South Korea (Shin, 2002) where countries had high prevalence of HBsAg, according to WHO, 2001.

However, this finding is not surprising in the situation of hepatitis B in Vietnam where the prevalence of HbsAg positive range from 5.7% to 24.7% in the healthy subjects (Nguyen VTT, 2010). The prevalence of HBsAg positive in this study was about the same the study in rural area of Thaibinh province and in another study in Thanhhoa province with HBsAg positive were 19.0% and 18.8% (Hipgrave et al, 2003). The prevalence different of these studies were not much and it may be depend on study setting, but still this result must be consider as a high prevalence of HBsAg positive among Stieng tribe adult in Binhphuoc province.

5.1.2 Personal and socio-demographics characteristics of the subject

The majority of participants were farmers, nearly half of them cannot read and write, two third were in married status and more than half of the participant did not have enough money to meet the need. It may relate to culture, traditional practice and language barrier. The main occupation of the Stieng tribe was farming follow season, not many shop selling food or housing things in their village because it was not success as some of them had been tried. The reason for that was they shy to asked money back when loan to someone. They were still in poverty may relate to their culture, they do not save money after crop but they spend all and start the new crop by borrow money from other. Most of the tribal people in Vietnam married early and Stieng tribe was one of them. They had low education may relate to language barrier, they had their own Stieng language and use in daily life, but the language is using in school is Vietnamese and they had to travel quite far to go to school. Most of the participants did not know their history or family member history about hepatitis B infection or liver diseases may relate to poverty and culture that they do not go for health check-up or treatment when they still can work.

5.1.3 Knowledge on hepatitis B of the subject

The participants were asked about the transmission and sequel of HBV within 13 questions and nearly half of them answered that have heard about Hepatitis B (48.0%) and this result lower than the study among Cambodian American women in Seattle (56.0%) and among Vietnamese American (81.0%),

and most of the knowledge item follow also lower than the two study in Cambodian and Vietnamese American (Taylor M, 2005). Most of the responders know about the sequela of the HBV (except about HBV cannot be cure completely), but they did not know about the transmission of the disease. The result showed that hepatitis B is not widely and deeply inform to the Stieng tribe.

5.1.4 Health behavior of the subject

The participants have been vaccinated against HBV were low only 3.1%, this result was appropriate with the situation in this area while the universal infant vaccination program was introduced in late 2003. Only 17.1% have been done in surgery and 15.4% received sexual transmitted infection treatment among the participants these number again showed that poor health care among Stieng tribe. 8.7% of them had tattoo on the body and most of them were male, 58% piercing ear were mostly in female. Only half of the participants visited community barber for shaving or nail cutting. More than half of the participants do not have personal nail cutting, 30% and 35.3% of the participants answered that they used to share the razor and toothbrush with other; this was not surprising finding among Stieng tribe who was under poverty and low level of education. Only 2.2% answered that they had been reused syringe and low rate of having sexual intercourse with other (4.5%) aside from their partner. This result may relate to religious, most of the Stieng tribe in this area were Christian who go to church every Sunday and listen to sermon (most of the teaching about morality) and they lived in their own community where everyone know each other and far from the town where can find sex-worker. For drinking, high percentage of non-drinking among the participants (72.3%), but beside that the once who drink were mostly harmful-drinker (27.5%) and 1.7% of hazardous-drinker. There were 72.3% of the participants were non-smoking, 26.6% were current smoker and only 1.1% was ex-smoker. This finding may relate to religious and culture that mostly women do not drink or smoke, the rate of drinking and smoking mostly in male.

5.1.5 Association between personal and socio-demographics characteristics factors and hepatitis B infection of the subject

Only gender was significantly associated with hepatitis B infection (p-value= 0.012) that male had hepatitis B infection higher than female, and this result was not difference from the study in 4000 adult in Northeast China (Zhang, 2011). The study in two districts of Thanhhoa province, Vietnam also showed that the prevalence of HBsAg positive in male higher than in female (Hipgrave et al, 2003). It may relate to health behavior in male like tattoo on the body mostly in male, visit community barber for shaving or drinking and smoking mostly in male.

Other factors were not significantly associated with hepatitis B infection. However, education level should be consider with the prevalence of HBsAg positive in low level of education (15.1%) (<secondary level) lower than in the group had education greater than secondary level (28.1%). It may relate to sample size that the majority of the participant had low education level (91.0%) and may relate to age groups that the prevalence of HBsAg positive in the young age groups (16.8% in 18 – 24 years and 21.8% in 25 – 34 years) had higher prevalence of HBsAg than older age group (11.6% in 35 – 44 years and 11.7% in 45 – 49 years). In addition, young age groups had the opportunity to study more than older age groups.

5.1.6 Association between level of knowledge and hepatitis B infection of the subject

The association between level of knowledge and hepatitis B infection was not significant (p-value= 0.075). The prevalence of hepatitis B infection in the low level of knowledge group (1-6 score) was higher than in the group never heard about hepatitis B (0 score) and in the high level of knowledge group (>6 score). The high prevalence of HBsAg in low level of knowledge group may relate to history of hepatitis B infection or liver diseases of the participants or participants' family member. It relate to history of hepatitis B infection or liver diseases of the participants or participants' family member (it was significant associate with knowledge level P-value <0.001) (Appendix A). They may know the information

about hepatitis B from their health provider during treatment or from family member or neighborhood but it may not understand clearly and deeply.

5.1.7 Association between health behavior and hepatitis B infection of the subject

Visiting community barber for shaving or nail cutting was significantly associated with hepatitis B infection (20.9%, p-value= 0.01). This finding was not difference from the study in Bangladesh on 2000 participants (p-value= 0.008) (Ashraf, 2006). The result may relate to non-using personal clipper or sharing razor blade with other.

Personal nail clipper using was significantly associated with hepatitis B infection (p-value= 0.011). The result was quite surprise when it showed the participants used their own personal clipper had higher prevalence of HBsAg (23.1%) than the one did not have (12.7%). It relate to history of hepatitis B infection or liver diseases of the participant or family member (Appendix A). Health provider may advise them to use their own personal clipper in order to protect family member from spread HBV.

Multiple sexual partners were significantly associated with hepatitis B infection (p-value= 0.002). The prevalence of HBsAg higher in the group answered “yes” (43.8%) than in the group answered “no” (15.0%). This finding was supported from the study of Mehmet Ali Kurcer and Erkan Pehlivan in 646 participants in urban areas of Malatya, Turkey.

Other health behavior factors were non-significantly associated with hepatitis B. However, tattoo on the body factor should be consider because the prevalence of HBsAg positive in this group (25.8%) quite higher than in the group non-tattoo (15.3%). The prevalence of HBsAg positive in the group with piercing ear, nose or body (20.7%) higher than in the group had not (13.0%). It may confound by gender because most of participants with piercing ear were female and the result from the study in Bangladesh on 2000 participants were significantly associated. Drinking and smoking factors should be consider although it was insignificant

association, because the prevalence of HBsAg positive among light and heavy drinking higher (23.2%, 19.0%) than non-drinking (14.3%) and the prevalence of HBsAg positive among current/ex-smoking higher (19.2%) than non-smoking (15.1%).

5.2 Conclusion

The prevalence of hepatitis B infection among Stieng tribe adults was 16.2%. The participants were mostly farmer, low education, with mean age 32.42, and more than half of them were married. For income, most of participants did not have enough money to meet the needs, and they did not know about their health status.

The participants had low level of knowledge on hepatitis B. More than half of them had never heard about hepatitis B, especially majority of the responder did not know about the transmission of the disease.

For health behavior, very few of the participants got hepatitis B vaccination (3.1%). It was 30.0% and 35.0% of the participant sharing razor and toothbrush; and 4.5% had multiple sexual partners. Drinking and smoking among the participant was 27.5% and 27.7%.

The main factors associated significantly with hepatitis B were: gender that male had higher prevalence of hepatitis B infection than female. For health behavior, the participants who were visiting community barber had higher prevalence of hepatitis B infection than the one not. The people who had their own personal nail clipper had higher prevalence of hepatitis B infection than the one not; and in the group that experience in multiple sexual partner had higher prevalence of hepatitis B infection than the one not. Although the level of knowledge was non-significant association with hepatitis B but it should be consider on the group of people had low level of knowledge that had highest prevalence of hepatitis B infection in comparing to non and high level of knowledge.

5.3 Recommendation

5.3.1 Recommendation from the result of this study

This study is the first study providing the prevalence and factor associate to hepatitis B infection. The prevalence of HBsAg was quite high among Stieng tribe adults; therefore the government and Ministry of Health should consider in health strategy in this group, especially in male gender.

Knowledge on hepatitis B, especially on transmission of the disease need to be educated to the group of people had low level of education, community barber and together with good practice on health behavior such as using personal razor and toothbrush, safe sex,... etc. Health providers need to make sure all the information providing that their patients understand clearly and deeply.

5.3.2 General recommendations

Promoting and campaign for HBV prevention and control need to be launched to draw attention from the government and Ministry of Health. Information on HBV also needed to promote among Stieng tribe through media such as television, radio, or in community meeting. Maintain high coverage rate of 3 dose HBV immunization among infants.

Most of the Stieng tribe are Christians, therefore Health Department in the province can co-operate with the Churches, school to educate church members and students about hepatitis. Combine HBV with other infection disease education.

5.3.2 Further study

Further study can extend this study through qualitative research among the Stieng tribe who had liver disease, liver cancer, or hepatitis to understand deeply about the main factor had been found and also the reason that may relate to their culture, society. Moreover, intervention study is also in need among this group of people to improve knowledge on HBV of the Stieng tribe.

REFERENCES

- Ashraf H, Nur HA, et al. *Prevalence and risk factor of hepatitis B and C virus infections in an impoverished urban community in Dhaka, Bangladesh*. BMC Infectious Disease 2010, 10:208.
- Bosch FX, Ribes J, Borrás J. *Epidemiology of primary liver cancer*. Semin Liver Dis; (1999). 19:217-285.
- Chau HH. *An Epidemiological Survey on Viral Hepatitis Infection in a General Population of Tan Chau District, An Giang Province* [dissertation, in Vietnamese]. Hanoi, Vietnam: Institute of Military Medicine; (1995).
- Duong TH, Nguyen PH, Henley K, Peters M. *Risk factor for hepatitis B infection in rural Vietnam*. Source Gastroenterology Department, Thainguyn Medical School, Vietnam. Asian Pac J Cancer Prev; (2009 Jan-Mar). 10(1):97-102.
- Elecsys and cobas e analyzers. *Roche Diagnostics GmbH, D-68298 Mannheim*; (2009).
- Ganem D, Schneider RJ. *Hepadnaviridae: The Viruses and Their Replication*. In: Knipe DM et al., eds. *Fields Virology*, 4th ed. Philadelphia, Lippincott Williams & Wilkins; (2001). 2923-2969.
- Gitlin N. *Hepatitis B: diagnosis, prevention, and treatment*. Clinical Chemistry; (1997). 43:1500-1506.
- Goshman DS (Ed). *Handbook of Health Behavior Research*, New York. Plenum; (1997). Vols. 1-4:
- Hipgrave DB, et al. *Hepatitis B infection in rural Vietnam and the implications for a national program of infant immunisation*. Am J Trop Med Hyg; (2003). 69:288-94.
- Hollinger FB, Liang TJ. *Hepatitis B Virus*. In: Knipe DM et al., eds. *Fields Virology*, 4th ed. Philadelphia, Lippincott Williams & Wilkins; (2001). 2971-3036.
- Katsushi I. *Poverty, Inequality and Ethnic Minorities in Vietnam*. University of Manchester, UK; (December 2007).
- Kurcer M, Ali, Pehlvan E. *Hepatitis B seroprevalance and risk factors in urban areas of Malatya*. University Medical School, Department of Public Health, Malatya. Turk J Gastroenterol; (2002); 13 (1): 1-5

- Lavanchy D. *Worldwide epidemiology of HBV infection, disease burden, and vaccine prevention*. *Journal of Clinical Virology*; (2005). 34 Suppl. 1
- Mahoney FJ, Kane M. *Hepatitis B vaccine*. In: Plotkin SA and Orenstein WA, eds. *Vaccines*, 3rd ed. Philadelphia, W.B. Saunders Company; (1999). 158-182.
- Mehmet AK, Erkan P. *Hepatitis B seroprevalence and risk factors in urban areas of Malatya*. Inonu University Medical School, Department of Public Health, Malatya. *Turk J Gastroenterol* (2002); 13 (1): 1-5.
- Nguyen TY. *Prevalence of and associated factors for HBsAg positivity among offshore fishermen, Hai phong city [in Vietnamese]*. *Vietnam Med*; (2007). 1:150-157.
- Nguyen VT, McLaw ML, Dore GJ. *Highly endemic hepatitis B infection in rural Vietnam*. *J GastroenterolHepatol*. (December 2007). 22(12):2093-100.
- Nguyen VTT, Law MG, Dore GJ. *An enormous hepatitis B virus-related liver disease burden projected in Vietnam by 2025*. *Liver Int*; (2008). 28:525-531.
- Nguyen VTT. *Hepatitis B Infection in Vietnam: Current Issue and Future Challenges*. *Asia-Pacific Journal of Public Health*; (2010). doi: 10.1177/1010539510385220
- Robinson WS. *Hepatitis B virus and hepatitis D virus*. In: Mandell GL, Bennett JE, Dolin R, eds. *Principles and Practice of Infectious Diseases*, 4th ed. New York, Churchill Livingstone; (1995). 1406-1439.
- Rosner B. *Fundamentals of Biostatistics*. Boston: Duxbury. (1986).
- Shin H R. *Hepatitis B and C virus prevalence in a rural area of South Korea: the role of acupuncture*. *British Journal of Cancer* (2002) 87, 314–318. doi:10.1038/sj.bjc.6600436
- Tran T. *Epidemiological Surveillance for HBV Infection in the Population of Hanoi City. Hanoi, Vietnam*: The Hanoi Medical University; (1986).
- Taylor M. *Hepatitis B knowledge and practices among Chinese immigrant to the United State*. *Asian Pacific J Cancer Prev*; (2005). 7, 313-317.
- Taylor M, MD, MPH; John H. Choe, MD, MPH; Yutaka Yasui, PhD; Lin Li, MS; Nancy Burke, PhD; and J. Carey Jackson, MD, MA, MPH. *Hepatitis B awareness, testing, and knowledge among Vietnamese American men and*

women. *Journal of Community Health*; (2005). Vol. 30, No. 6. DOI: 10.1007/s10900-005-7282-3.

Wong JB, Koff RS, Tine F, Pauker SG. *Cost-effectiveness of interferonalpha 2b treatment for hepatitis B e antigen-positive chronic hepatitis B*. *Ann Intern Med*; (1995). 122(9):664-75.

World Health Organization. *Hepatitis B*. Fact sheet No 204. [Last accessed September 2006]; Available from:

<http://www.who.int/mediacentre/factsheets/fs204/en/prit.html>

World Health Organization, *Introduction of hepatitis B vaccine into childhood immunization services*. Report No.:WHO/V&B/01.31.Geneva; (2001_A).

[World Health Organization, report. *Hepatitis B Surface Antigen Assays: Operational Characteristics \(Phase1\); \(2001\)*.](#)

World Health Organization, *Department of Communicable Diseases Surveillance and Response. Hepatitis B*. Report No.: WHO/CDS/CSR/LYO/2002.2.

World Health Organization. *Hepatitis B*. Revised August 2008. Available from: <http://www.who.int/mediacentre/factsheets/fs204/en/>

World Health Organization. *Global Alert and Response (GAR)*. Available from: <http://www.who.int/csr/disease/hepatitis/whocdscsrlyo20022/en/index1.html>

World Health Organization. *Hepatitis B prevention*. Available from: <http://www.who.int/mediacentre/factsheets/fs204/en/>

[Xiaoqing L. *Hepatitis B virus infections and risk factors among the general population in Anhui Province, China: an epidemiological study*. *BMC Public Health*; \(2012\). 12:272 doi:10.1186/1471-2458-12-272](#)

Yang BM, Paik SW, Hahn OS, Yi DH, Choi MS, Payne S. *Economic evaluation of the societal costs of hepatitis B in South Korea*. *J Gastroenterol Hepatol*; (2001). 16(3):301-8.

Zhang H, Li Q, Sun J, Wang C, Gu Q, Feng X, Du B, Wang W, Shi X, Zhang S, Li W, Jiang Y, Feng J, He S, Niu J. *Seroprevalence and Risk Factors for Hepatitis B Infection in an Adult Population in Northeast China*. *Int J Med Sci*; (2011). 8:321-331. Available from <http://www.medsci.org/v08p0321.htm>

APPENDICES

APPENDIX A

Association between Knowledge levels and Characteristics

Characteristics	Knowledge levels			p-value
	No knowledge	Low	High	
History of HBV infection or liver disease				
No/ don't know	183 (56.3)	68 (20.9)	74 (22.8)	< 0.001
Yes	4 (12.5)	14 (43.8)	14 (43.8)	
History of family member with HBV infection or liver disease				
No/ don't know	173 (56.7)	64 (21.0)	68 (22.3)	< 0.001
Yes	14 (26.9)	18 (34.6)	20 (38.5)	

Association between Health behavior and Characteristics

Characteristics and socio-demographic	Using personal nail clipper		Chi-square	P-value
	No	Yes		
History of HBV infection or liver disease				
No/don't know	219 (67.4)	106 (32.6)	6.293	0.012
Yes	17 (53.1)	15 (46.9)		
Family member with history of HBV infection or liver disease				
No/don't know	84 (83.2)	17 (16.8)	4.808	0.188
Yes	86 (78.2)	24 (21.8)		

APPENDIX B

Code number

QUESTIONNAIRE

Dear.....,

We are doing research on “Prevalence and risk factors for Hepatitis B infection in Stieng tribe adults in Binhphuoc province.”

Please answer all the questions below by yourself. Your cooperation is contributory an important part in the research to help the Health center has appropriate and effective solution on Hepatitis B infection in the future to improve health in the community.

We guarantee all of your providing information will be used only for research and kept confidently.

Interviewer : Date: __/__/2012

(Please circle the number that your answer is or write down your answer on “.....”)

Code	Question	Answer	Choice	Note
PART A: Social-demographic and Charateristics				
A1	Gender	Male 1 Female 2	<input type="checkbox"/>	
A2	Age		
A3	Education		
A4	Marital status	Single 1 Married 2 Divorced/Separated 3 Widowed 4	<input type="checkbox"/>	
A5	Occupation	Farmer 1 Worker 2 Small business 3 Housewife 4	<input type="checkbox"/>	

		Other (Specific.....) 5		
A6a	Income (VND/year)	Individual:..... Family:.....		
A6b	Do you have enough money to meet the need?	Not at all 1 A little 2 Moderately 3 Mostly 4 Completely 5	<input type="checkbox"/>	
A7	Who are you living with?	Ganrd-father/mother 1 Father/mother 2 Brother/sister 3 Children 4 Other:..... 5	<input type="checkbox"/>	
A8	How many members are living in your house?		
C10a	Do you drink?	Yes 1 No 2	<input type="checkbox"/>	No_ jump to C11a
C10b	How many ml/day?	Alcohol: Beer:.....		
C11a	Do you smoke?	Yes 1 No 2 Ex-smoking 3	<input type="checkbox"/>	No_ jump to B1
C11b	How many cigarette/day?		

(Please circle the number that your answer is or write down your answer on “.....”)

Code	Question	Answer	Choice	Note
PART B: KNOWLEDGE ON HBV				
B1	Have you ever heard about HBV infection?	Yes No	1 2 <input type="checkbox"/>	No_ jump to C1
B2	Hepatitis B is more easily spread from person to person than AIDS.	Yes No Don't know	1 2 3 <input type="checkbox"/>	
B3	Someone is infected with hepatitis B but they look and feel healthy, that person can spread hepatitis B.	Yes No Don't know	1 2 3 <input type="checkbox"/>	
B4	Hepatitis B can be spread by eating food prepared by an infected person.	Yes No Don't know	1 2 3 <input type="checkbox"/>	
B5	Hepatitis B can be spread by sharing a toothbrush with an infected person.	Yes No Don't know	1 2 3 <input type="checkbox"/>	
B6	Hepatitis B can be spread by eating food that has been prechewed by an infected person.	Yes No Don't know	1 2 3 <input type="checkbox"/>	
B7	Hepatitis B can be spread by being coughed on by an infected person.	Yes No Don't know	1 2 3 <input type="checkbox"/>	
B8	Hepatitis B can be spread by having sexual intercourse with an infected person.	Yes No Don't know	1 2 3 <input type="checkbox"/>	

B9	Hepatitis B can be spread by holding hands with an infected person.	Yes No Don't know	1 2 3	<input type="checkbox"/>	
B10	People with hepatitis B can be infected for life.	Yes No Don't know	1 2 3	<input type="checkbox"/>	
B11	Hepatitis B can cause liver cancer.	Yes No Don't know	1 2 3	<input type="checkbox"/>	
B12	Someone can die from hepatitis B.	Yes No Don't know	1 2 3	<input type="checkbox"/>	
B13	Hepatitis B disease can be cured.	Yes No Don't know	1 2 3	<input type="checkbox"/>	

(Please circle the number that your answer is or write down your answer on ".....")

Mã	Câu hỏi	Trả lời	Lựa chọn	Ghi chú
PART C: HEALTH BEHAVIOR				
C1	Have you ever vaccinated HBV?	Yes No	1 2	<input type="checkbox"/>
C2	Have you ever done surgery?	Yes No	1 2	<input type="checkbox"/>
C3	Have you ever received treatment for sexually transmitted infections (STIs)? (such as: Gonorrhoea, Syphilis, Herpes, Chlamydia, HIV/AIDS...)	Yes No	1 2	<input type="checkbox"/>

C4	Do you have any tattoo on the body?	Yes No	1 2	<input type="checkbox"/>	
C5	Do you pierce ear, nose or body?	Yes No	1 2	<input type="checkbox"/>	
C6	Have you ever visit community barber for shaving or nail cutting?	Yes No	1 2	<input type="checkbox"/>	
C7	Do you use your own nail cutting?	Yes No	1 2	<input type="checkbox"/>	
C8	Do you share razors with other?	Yes No	1 2	<input type="checkbox"/>	
C9	Do you share tooth-brush with other?	Yes No	1 2	<input type="checkbox"/>	
C10	Do you reuse syringes?	Yes No	1 2	<input type="checkbox"/>	
C11a	Have you ever have sexual intercourse with your partner?	Yes No	1 2	<input type="checkbox"/>	
C11b	Aside from a partner, have you ever have sexual intercourse with others?	Yes No	1 2	<input type="checkbox"/>	
A9a	Have you ever heard from someone that you have hepatitis B disease?	Yes No Don't know	1 2 3	<input type="checkbox"/>	Don't know_ jump to A10a
A9b	Who is that person?	Doctor Nurse Powwow Other:.....	1 2 3		

A9c	Where did you go for check-up?	Hospital 1 Clinic 2 Powwow's house 3 Other:.....		
A10a	In your family, is there anyone get hepatitis B disease?	Yes 1 No 2 Don't know 3	<input type="checkbox"/>	Don't know_ skip last two questio n
A10b	Who check for that person?	Doctor 1 Nurse 2 Powwow 3 Other:.....		
A10c	Where did they go for check-up?	Hospital 1 Clinic 2 Powwow's house 3 Other:.....		

THANK YOU!

APPENDIX C

Mã số phiếu

PHIẾU KHẢO SÁT

Chào anh/chị!

Chúng tôi hiện đang thực hiện một đề tài nghiên cứu về “Tỷ lệ hiện mắc và yếu tố nguy cơ của viêm gan siêu vi B trong cộng đồng người Stiêng trưởng thành tại xã Phú Nghĩa, huyện Bù Gia Mập, tỉnh Bình Phước.”

Xin anh/chị vui lòng trả lời (tự mình trả lời, không tham khảo người khác) những câu hỏi trong bảng dưới đây. Sự cộng tác của anh/chị góp phần quan trọng cho việc tìm hiểu nguy cơ mắc bệnh viêm gan B nhằm giúp cho các cơ quan chức năng có những biện pháp phòng bệnh thích hợp và hiệu quả hơn.

Chúng tôi bảo đảm tất cả những thông tin mà các chị cung cấp chúng tôi chỉ sử dụng cho **mục đích nghiên cứu khoa học và hoàn toàn được giữ kín.**

Điều tra viên : Ngày điều tra: __/__/2012

(Xin anh/chị khoanh tròn vào con số lựa chọn hoặc tự điền vào phần trả lời có dấu “.....”)

Mã	Câu hỏi	Trả lời	Lựa chọn	Ghi chú
PHẦN A: CÁC THÔNG TIN CÁ NHÂN				
A1	Giới tính	Nam Nữ	1 2	<input type="checkbox"/>
A2	Năm sinh		
A3	Trình độ học vấn		
A4	Tình trạng hôn nhân:	Chưa lập gia đình Đang có chồng/vợ Ly thân/ ly dị Góa	1 2 3 4	<input type="checkbox"/>
A5	Anh/chị đang làm nghề gì?	Nông dân Công nhân Buôn bán nhỏ	1 2 3	<input type="checkbox"/>

		Nội trợ	4		
		Khác (ghi rõ:.....)	5		
A6a	Thu nhập hàng năm (đồng/năm)	Cá nhân:.....			
		Gia đình:.....			
A6b	Anh/chị có đủ tiền để đáp ứng cầu hàng ngày?	Không đủ	1	<input type="checkbox"/>	
		Gần đủ	2		
		Vừa đủ	3		
		Dư	4		
		Rất dư	5		
A7	Anh/chị hiện đang sống với ai?	Ông/bà	1	<input type="checkbox"/>	
		Cha/mẹ	2		
		Anh/chị	3		
		Con/cháu	4		
		Khác:.....	5		
A8	Có bao nhiêu người sống trong nhà với anh/chị?			
C10a	Anh/chị có uống rượu/bia không?	Có	1	<input type="checkbox"/>	Không chuyển qua câu C11a
		Không	2		
C10b	Anh/chị uống bao nhiêu mỗi lần?	Rượu:			
		Bia:.....			
C11a	Anh/chị có hút thuốc lá hoặc thuốc lá không?	Có	1	<input type="checkbox"/>	Không chuyển qua câu B1
		Không	2		
		Đã từng hút	3		
C11b	Anh/chị hút bao nhiêu điếu/lần mỗi ngày?			

(Xin anh/chị khoanh tròn vào con số lựa chọn hoặc tự điền vào phần trả lời có dấu “.....”)

Mã	Câu hỏi	Trả lời	Lựa chọn	Ghi chú
PHẦN B: KIẾN THỨC VỀ VIÊM GAN SIÊU VI B				
B1	Anh/chị trước đây có nghe nói về bệnh viêm gan siêu vi B (VGSV B) hay bệnh vàng da chưa?	Có Không	1 2 <input type="checkbox"/>	Không chuyên qua câu C1
B2	Bệnh viêm gan siêu vi B dễ lây lan từ người này qua người khác hơn bệnh sida.	Đúng Sai Không biết	1 2 3 <input type="checkbox"/>	
B3	Một người bị bệnh viêm gan siêu vi B nhưng trông khỏe mạnh, người đó có thể lây bệnh cho người khác.	Đúng Sai Không biết	1 2 3 <input type="checkbox"/>	
B4	Viêm gan siêu vi B có thể lây qua thức ăn được chuẩn bị bởi người bệnh viêm gan siêu vi B.	Đúng Sai Không biết	1 2 3 <input type="checkbox"/>	
B5	Viêm gan siêu vi B có thể lây lan qua việc dùng chung bàn chải đánh răng với người bệnh viêm gan siêu vi B.	Đúng Sai Không biết	1 2 3 <input type="checkbox"/>	
B6	Viêm gan siêu vi B có thể lây qua thức ăn đã được nhai lại bởi người bệnh viêm gan siêu vi B.	Đúng Sai Không biết	1 2 3 <input type="checkbox"/>	
B7	Viêm gan siêu vi B có thể lây từ cơn ho của người bệnh viêm gan siêu vi B.	Đúng Sai Không biết	1 2 3 <input type="checkbox"/>	
B8	Viêm gan siêu vi B có thể lây qua quan hệ tình dục với người bị bệnh viêm gan siêu vi B.	Đúng Sai Không biết	1 2 3 <input type="checkbox"/>	

B9	Viêm gan siêu vi B có thể lây khi nắm tay người bệnh viêm gan siêu vi B.	Đúng Sai Không biết	1 2 3	<input type="checkbox"/>	
B10	Người bị bệnh viêm gan siêu vi B có thể ảnh hưởng đến cuộc sống.	Đúng Sai Không biết	1 2 3	<input type="checkbox"/>	
B11	Người bị bệnh viêm gan siêu vi B có thể dẫn đến ung thư gan.	Đúng Sai Không biết	1 2 3	<input type="checkbox"/>	
B12	Người bị bệnh viêm gan siêu vi B có thể dẫn đến tử vong.	Đúng Sai Không biết	1 2 3	<input type="checkbox"/>	
B13	Bệnh viêm gan siêu vi B có thể chữa hoàn toàn.	Đúng Sai Không biết	1 2 3	<input type="checkbox"/>	

(Xin anh/chị khoanh tròn vào con số lựa chọn hoặc tự điền vào phần trả lời có dấu “.....”)

Mã	Câu hỏi	Trả lời	Lựa chọn	Ghi chú
PHẦN C: HÀNH VI SỨC KHỎE				
C1	Anh/chị có chứng ngứa VGSV B chưa?	Có Chưa	1 2	<input type="checkbox"/>
C2	Anh/chị đã từng có phẫu thuật/ tiểu phẫu trước đây chưa?	Có Không	1 2	<input type="checkbox"/>
C3	Anh/chị có từng mắc và chữa các bệnh liên quan đến nhiễm trùng đường sinh dục không? (như: Bệnh lậu, Bệnh giang mai, Mụn rộp (Herpes sinh dục), Mồng gà, HIV/AIDS...)	Có Không	1 2	<input type="checkbox"/>

C4	Anh/chị có xăm hình trên người không?	Có Không	1 2	<input type="checkbox"/>	
C5	Anh/chị có xô lỗi tai không?	Có Không	1 2	<input type="checkbox"/>	
C6	Anh/chị có từng đến tiệm hót tóc trong thôn để cạo râu hay lông mặt hay làm móng không?	Có Không	1 2	<input type="checkbox"/>	
C7	Anh/chị có sử dụng dụng cụ làm móng của riêng mình không?	Có Không	1 2	<input type="checkbox"/>	
C8	Anh/chị có sử dụng chung dao cạo với người khác không?	Có Không	1 2	<input type="checkbox"/>	
C9	Anh/chị có sử dụng chung bàn chải đánh răng với người khác không?	Có Không	1 2	<input type="checkbox"/>	
C10	Anh/chị có sử dụng chung kim tiêm với người khác không?	Có Không	1 2	<input type="checkbox"/>	
C11a	Anh/chị có từng quan hệ tình dục với bạn tình/người phối ngẫu không?	Có Không	1 2	<input type="checkbox"/>	
C11b	Ngoài bạn tình/người phối ngẫu, anh/chị có quan hệ tình dục với ai khác không?	Có Không	1 2	<input type="checkbox"/>	
A9a	Anh/chị có từng nghe ai nói mình bị bệnh viêm gan siêu vi B không?	Có Không Không biết	1 2 3	<input type="checkbox"/>	Không biết , chuyển qua câu A10a
A9b	Ai nói cho anh/chị biết?	Bác sỹ Y tá/ y sỹ Thầy lang	1 2 3		

		Khác:.....		
A9c	Anh/chị đi khám ở đâu?	Bệnh viện 1 Trạm y tế xã/thôn 2 Nhà thầy lang 3 Khác:.....		
A10a	Gia đình anh/chị có ai bị bệnh viêm gan siêu vi B hay bệnh gan không?	Có 1 Không 2 Không biết 3	<input type="checkbox"/>	Không biết_ bỏ qua 2 câu cuối
A10b	Ai khám bệnh cho người đó?	Bác sỹ 1 Y tá/ y sỹ 2 Thầy lang 3 Khác:.....		
A10c	Đi khám ở đâu?	Bệnh viện 1 Trạm y tế xã/thôn 2 Nhà thầy lang 3 Khác:.....		

XIN CẢM ƠN!

APPENDIX D

RELIABILITY

Knowledge on Hepatitis B

Kuder-Richardson (KR20) formula:

$$KR20 = \frac{k}{k - 1} \left(\frac{SD^2 - \sum pq}{SD^2} \right)$$

$$KR20 = \frac{13}{12} \left(\frac{123.43 - 27.78}{123.43} \right)$$

$$KR20 = .85$$

k: the number of items on the test

SD: the variance of score

p: the proportion of the group that response correctly

q: 1 - p

APPENDIX E

ETHICAL APPROVAL

MINISTRY OF HEALTH
HANOI SCHOOL OF PUBLIC HEALTH

SOCIALIST REPUBLIC OF VIETNAM
Independence – Freedom – Happiness

No.: 004/2012/YTCC-HD3
Subject: Ethical Approval

Ha Noi, February 06, 2012

DECISION

On Ethical approval for research involving human subject participation

THE CHAIR OF THE ETHICAL REVIEW BOARD FOR BIOMEDICAL RESEARCH
HANOI SCHOOL OF PUBLIC HEALTH

- Based on Decision No. 645/QĐ-YTCC by the Dean of Hanoi School of Public Health on Establishment of The Institutional Ethical Review Board of Hanoi School of Public Health; 07 November 2003 ;
- Based on decision No. 491/QĐ-YTCC by the Dean of Hanoi School of Public Health on the Issuing Regulation of the Institutional Ethical Review Board of Hanoi School of Public Health; 24 September 2004;
- After reviewing research ethics application No. 012-004/DD-YTCC;
- And based on the memo dated February 01, 2012.

DECIDED

Article 1. Grant ethical approval for ethnographic study project:

- Project Title: Prevalence and risk factor for Hepatitis B infection in Stieng tribe adults in Binh Phuoc province, Vietnam
- Principal Investigator : **Ai Thien Nhan Lam**- Student in MPH
College of Public Health Sciences, Chulalongkorn University, Thailand
- Research site: Binh Phuoc province, Vietnam
- Data collection time: from 02/20/2012 to 3/20/2012
- Project Time: from 8/01/2011 to 5/31/2012

Article 2. This decision is effective from 02/06/2012

Article 3. Principle Investigator should notify the Institutional Ethical Review Board of Hanoi School of Public Health (IRB of HSPH) immediately of any adverse effects arising from this study (e.g. unexpected adverse outcomes, unexpected community/subject risk factors or complaints, etc.). Active research projects are subject to random audit by the IRB of HSPH.

CHAIR OF INSTITUTIONAL ETHICAL REVIEW BOARD
(Signature and full name)



Nguyen Thanh Huong

SECRETARY
(Signature and full name)



Nguyen Thi Minh Thanh

APPENDIX F

Form of Informed Consent Form

Address

Date

.....

Code number of participant

I who have signed here below agree to participate in this research project

Title “Prevalence and risk factors for Hepatitis B infection in Stieng tribe adults in Binhphuoc province, Vietnam.”

Principle researcher’s name Ai Thien Nhan Lam

Contact address: 53 Soi Saen Sabai_Rama 4_Bangkok_Thailand

670/46a Doanvanbo_District 4_Hochiminh city_Vietnam

Telephone (+66)843774272 (Thailand) (+84)613844617 (Vietnam)

I have been informed about rationale and objectives of the project, what I will be engaged with in details, risk/harm and benefit of this project. The researcher has explained to me and I **clearly understand with satisfaction**.

I willingly **agree** to participate in this project and consent the researcher to be drawn 4cc (1 tea spoonful) of blood and response to questionnaires with 33 questions will take about 15-20 minutes.

I have **the right** to withdraw from this research project at any time as I wish with no need to **give any reason**. This withdrawal **will not have any negative impact upon me (eg: still receive the usual services)**.

Researcher has guaranteed that procedure(s) acted upon me would be exactly the same as indicated in the information. Any of my personal information will be **kept confidential**. Results of the study will be reported as total picture. Any of personal information which could be able to identify me will not appear in the report.

If I am not treated as indicated in the information sheet, I can report to the HANOI SCHOOL OF PUBLIC HEALTH, Ethical Review Board. 138 Giang Vo, Ba Dinh District Hanoi, Vietnam Tel: 04. 6237 2040 Fax: 04.62660 2385 E-mail: webmaster@hsph.edu.vn

I also have received a copy of information sheet and informed consent form

Sign

(.....)

Researcher

Sign

(.....)

Participant

Sign

(.....)

Witness

VITAE

Name : Ms. Ai Thien Nhan Lam

Date of Birth : 13th July, 1985

Place of Birth : Dongnai province, Vietnam

Education : Bachelor of Public Health

Graduated from Hochiminh City
University of Medicine and Pharmacy,
Hochiminh City, Vietnam in the year
2008

Work Experience : 2008-2011

Volunteer as Health training Assistant

Worked at CTTM (Christ To Thailand
Mission) in Bangkok, Thailand.