Delay in Health Seeking Behavior among TB Patients in Chiang Rai Province, Thailand.

Mr. Yotsanon Sikkhajan

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พฤติกรรมแสวงหาการรักษาที่ล่าช้าของผู้ป่วยวัณโรคในจังหวัดเชียงราย ประเทศไทย

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วิทยานิพนธ์นี้เป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปริญญาสาธารณสุขศาสตรมหาบัณฑิต
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By	Mr. Yotsanon Sikkhajan
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Thesis Advisor	Dr. Wandee Sirichokchatchawan, Ph.D.

Accepted by the College of Public Health Sciences, Chulalongkorn University in Partial Fulfillment of the Requirement for the Master of Public Health

..... Dean of the College of Public Health Sciences
(Professor Dr. Sathirakorn Pongpanich, Ph.D)

THESIS COMMITTEE

..... Chairman
(Associate Professor Dr. Ratana Somrongthong, Ph.D.)
..... Advisor
(Dr. Wandee Sirichokchatchawan, Ph.D.)
..... External Examiner
(Dr. Nanta Auamkul, M.D, M.P.H)

ยศนนท์ สิกขาจารย์ : พฤติกรรมแสวงหาการรักษาที่ล่าช้าของผู้ป่วยวัณโรคในจังหวัดเชียงราย ประเทศไทย. (Delay in Health Seeking Behavior among TB Patients in Chiang Rai Province, Thailand.) อ.ที่ปรึกษาหลัก : ดร.วันดี ศิริโชคชัชวาล

การศึกษาครั้งนี้มีวัตถุประสงค์ เพื่อศึกษาพฤติกรรมแสวงหาการรักษาที่ล่าช้า และปัจจัยที่เกี่ยวข้องกับการแสวงหาการรักษาที่ล่าช้าของผู้ป่วยวัณโรค ในโรงพยาบาลชายแดนจังหวัดเชียงราย ประเทศไทย การศึกษาครั้งนี้เป็นการวิจัยแบบภาคตัดขวาง โดยดำเนินการเก็บข้อมูลระหว่างเดือนพฤษภาคมถึงมิถุนายน 2018 โดยศึกษาจากกลุ่มตัวอย่างผู้ป่วยวัณโรค อายุ 18 ปีบริบูรณ์ขึ้นไป ที่เข้ารับการรักษาในสี่โรงพยาบาลที่มีพื้นที่ติดกับเขตชายแดน ในจังหวัดเชียงราย จำนวนทั้งหมด 103 คน ใช้แบบสอบถามเพื่อเก็บรวบรวมข้อมูลด้วยการสัมภาษณ์แบบตัวต่อตัว และวิเคราะห์ข้อมูลด้วยสถิติ ค่าร้อยละ ค่าเฉลี่ย ส่วนเบี่ยงเบนมาตรฐาน การทดสอบไคว์สแควร์หรือฟิชเชอร์ และใช้การวิเคราะห์พหุตัวแปรในการทดสอบสมการถดถอยโลจิสติกที่ค่าความเชื่อมั่น $p<0.05$ เพื่อหาความสัมพันธ์

ผลการศึกษาพบว่ากลุ่มตัวอย่างผู้ป่วยวัณโรคส่วนใหญ่มีอายุมากกว่า 60 ปี ขึ้นไป โดยคิดเป็นร้อยละ 27.2 และมีกลุ่มตัวอย่างมากถึงร้อยละ 48.5 ไม่ได้รับการศึกษา และ ร้อยละ 61.2 เป็นโสด กลุ่มตัวอย่างผู้ป่วยวัณโรคส่วนใหญ่มีสัญชาติไทยถึงร้อยละ 61.2 และเป็นกลุ่มชาติพันธุ์ร้อยละ 32 และมีสัญชาติพม่าร้อยละ 6.8 นอกจากนี้พฤติกรรมแสวงหาการรักษาที่ล่าช้าของกลุ่มตัวอย่างผู้ป่วยวัณโรคในการศึกษาครั้งนี้สูงถึงร้อยละ 65.1 โดยกลุ่มตัวอย่างส่วนใหญ่เลือกที่จะไปรักษาที่โรงพยาบาลรัฐและการรักษาด้วยตนเองร้อยละ 40.8 และ 20.4 ตามลำดับ โดยปัจจัยที่มีความสัมพันธ์อย่างมีนัยยะสัมพันธ์ทางสถิติ (AOR>1) ต่อพฤติกรรมแสวงหาการรักษาที่ล่าช้าของกลุ่มตัวอย่างผู้ป่วยวัณโรคในจังหวัดเชียงราย ได้แก่ การป่วยเป็นโรคเอชไอวี (AOR = 6.806, 95%CI: 1.174-39.462) สัญชาติ (AOR=2.824, 95%CI: 1.041-7.660) และระยะเวลาการเดินทางไปรับการรักษา (AOR = 18.467, 95%CI: 1.257-271.414) สรุปผลการศึกษาพบว่าปัจจัยมีความสัมพันธ์อย่างมีนัยยะสัมพันธ์ทางสถิติ (AOR>1) ที่กล่าวมาข้างต้น มีความสัมพันธ์เชิงบวกอย่างมีนัยสำคัญต่อต่อพฤติกรรมแสวงหาการรักษาที่ล่าช้าของกลุ่มตัวอย่างผู้ป่วยวัณโรคในจังหวัดเชียงราย และพบว่าโดยส่วนใหญ่ความล่าช้าในการแสวงหาการรักษาของผู้ป่วยวัณโรคในจังหวัดเชียงรายมีความชุกสูงถึงร้อยละ 65.1 ในการศึกษานี้จึงเสนอการจัดกิจกรรมเพิ่มเติมโดยมุ่งเน้นไปในด้านการพัฒนาความรู้เกี่ยวกับวัณโรคและพฤติกรรมการแสวงหารักษาสุขภาพของผู้ป่วยวัณโรคโดยเฉพาะในกลุ่มชาติพันธุ์เพื่อเพิ่มประสิทธิภาพในการควบคุมและรักษาโรควัณโรคต่อไป

สาขาวิชา สาธารณสุขศาสตร์ ลายมือชื่อนิสิต .....
ปีการศึกษา 2561 ลายมือชื่อ อ.ที่ปรึกษาหลัก .....

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Yotsanon Sikkhajan :
Delay in Health Seeking Behavior among TB Patients in Chiang Rai Province, Th ailand.. Advisor: Dr. Wandee Sirichokchatchawan, Ph.D.

The aim of this study was to determine the pattern of health seeking behavior and factors associated with delay in health seeking behavior among tuberculosis patients in border hospitals, Chiang Rai province, Thailand. A cross-sectional study was conducted in four biggest border hospitals in Chiang Rai province, Thailand during May to July 2018 among 103 identified tuberculosis cases. Data was collected by a structured questionnaire on patients' general characteristics, HIV status, distance from health service, health seeking treatment with onset symptoms, and patient delay. Collected data was analyzed in SPSS 22. Both descriptive and inferential statistics was employed in data analysis. Chi- square test was applied for the test of association between anemia and designated variables. Later, the variables with p-value <0.20 obtained in bivariate was processed for multivariate analysis and considered significant with p-value <0.05. Finally, adjusted odd ratio (AOR) with 95% of confidence interval (CI) was reported.

The study found that most of the participants were age more than 60 years old (27.2%), with 48.5% of the patients reported to have no educational background, and 61.2% were single. Thai nationality was found to be the highest nationality of the study's participants with 61.2%. Interestingly, the prevalence of delay in health seeking behavior among the study's participants was high at 65.1%. Government hospital and self-medication were mostly presented for health seeking behavior at 40.8% and 20.4%, respectively. From the result, the factors that significantly related to the delay in health seeking behavior among TB patients in Chiang Rai province were HIV status (AOR = 6.806, 95%CI: 1.174-39.462), Nationality (AOR = 2.824, 95%CI: 1.041-7.660) and duration to health facility (AOR = 18.467, 95% CI: 1.257-271.414). The study showed that delay in appropriate health seeking among TB patients in Chiang Rai province, Thailand were high. Therefore, further intervention emphasizes on the improvement of appropriate knowledge of TB and health seeking behavior to strengthen the TB control.

Field of Study: Public Health Student's Signature .....
Academic Year: 2018 Advisor's Signature .....

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Finaly, if there are ant mistakes in this study, the researcher would like to apologize for them.

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List of Abbreviation

AFB	Acid Fast Bacillus
E	Ethambutol
H	Isoniazid
MDR-TB	Multidrug-resistance Tuberculosis
R	Rifampicin
TB	Tuberculosis
WHO	World Health Organization
Z	Pyrazinamide

Chapter 1

Introduction

1.1 Rational and background

Tuberculosis (TB) is one of the oldest known diseases to humanity. It is a highly contagious respiratory infectious disease which can spread via droplets and secretion of an infected patient. This disease is caused by a bacterial microorganism called Mycobacterium tuberculosis (1). TB is one of the most common diseases in immunocompromised individuals such as HIV/AIDS patient. The treatment of TB involves a course of antibiotics which lasts for six months. It is important to finish the entire treatment to prevent treatment failure, which can cause the development of antibiotic-resistant tuberculosis (2).

Thailand is one of the highest TB burdened countries in the world. In 2016, Thailand has approximately 120,000 patients identified as a new case of tuberculosis and the incident rate equal to 172 per 100,000 population (3), but only 67,193 cases were reported and received treatment which calculated to be 59.4 percent. More than 40 percent of identified TB cases were missing, which increase the risk of spreading the disease to risk groups such as close contact people, children less than 5 years, and respiratory chronic disease patients; since gender, age, time and bacterial species/strains have been identified as risk factors (2). Additionally, TB can develop into multidrug-resistant TB (MDR-TB), which resistant to more than two types of drugs especially in the TB cases those do not complete the course of the treatment. Once the patients develop to be MDR-TB, they require longer treatment time and need more effective drugs, which result in higher cost of treatment. There were 4,500 MDR-TB cases reported in Thailand, with 2.2 percent as new TB cases and 24 percent as relapse TB. Nonetheless, the report found that only 200 patients were diagnosed and received treatment (3).

Chiang Rai province is one of the highest risk areas for TB. In 2016, there were 1,677 TB cases registered in Chiang Rai province, and the number of TB cases

increased to 1,725 in 2017. From those cases, 74 cases were reported to be relapse patients from more than three years ago. Additionally, the prevalence of TB patients in Chiang Rai province is 189 per 100,000 persons which more than prevalence of Thailand. One of the reasons contribute to the higher risk in Chiang Rai province is because the border of its four districts are adjacent to two countries, which are Myanmar and Laos.

Many TB patients are delay in diagnosis, which can be identified by four components include “Treatment Delay” (time interval between tuberculosis diagnosis and initiation of anti-tuberculosis drugs.), “Patient Delay” (time of sign and symptoms happen to first time for visit with health provider), “Diagnosis Delay” (time interval between the onset of symptoms and delay for diagnosis TB.), and “Health system delay” (time of first visit health provider to first time for right treatment) (4). Delay in TB may lead to the patient developing to MDR-TB which is difficult to treat and contribute to the increasing of the cost of treatment (5).

The Cross-border area is one of the high prevalence TB areas. Since cross-border populations are low-income minorities living near a border including legal and undocumented cross-border migrants which are manual workers, internal migrants, sex workers, and mobile occupational persons. Therefore, they are constantly moving which results in missing and fail cases of TB and lead to the persistence of TB (4). In Thailand, Chiang Rai province is the province adjacent with Myanmar and Laos, which have continuous movement of cross-border population across Chiang Rai borders. Consequently, Chiang Rai province has a problem with monitoring and screening of TB patients, which can cause to delay in health seeking behavior and delay TB patient. To the best of our knowledge, there is still the lack of knowledge on the health seeking behavior among TB patients in Chiang Rai province focusing on the border areas adjacent to Myanmar and Laos.

Therefore, the aim of this study is to finds the pattern of delay health seeking behavior among TB patients in border hospitals in Chiang Rai province, Thailand to increase the success rate of treatment and effectiveness of finding cases of TB patients.

1.2 Research question

1.2.1 What is pattern of health seeking behavior among TB patients in Chiang Rai province?

1.2.2 Is there any association between socio-demographic characteristics with patient delay among TB patients in Chiang Rai province?

1.2.3 Is there any association between access to health facility with patient delay behavior among TB patients in Chiang Rai province?

1.2.4 Is there any association between symptoms onset with patient delay behavior among TB patients in Chiang Rai province?

1.2.5 Is there any association between knowledge regarding patient delay behavior among TB patients in Chiang Rai province?

1.2.6 Is there any association between awareness regarding patient delay behavior among TB patients in Chiang Rai province?

1.2.7 Is there any association between stigma with patient delay behavior among TB patients in Chiang Rai province?

1.2.8 Is there any association between pattern of health seeking behavior with patient delay among TB patients in Chiang Rai province?

1.3 General objective

1.3.1 To find pattern of health seeking behavior (including the duration from onset of major symptoms to the time of seeking appropriate TB treatment) among TB patients in Chiang Rai province, Thailand.

1.4 Specific objective

1.4.1 To determine the association between socio-demographic characteristics with patient delay among TB patients in Chiang Rai province.

1.4.2 To determine the association between access to health facility with patient delay among TB patients in Chiang Rai province

1.4.3 To determine the association between symptoms onset with d patient delay among TB patients in Chiang Rai province

1.4.4 To determine the association between knowledge regarding patient delay among TB patients in Chiang Rai province.

1.4.5 To determine the association between awareness regarding patient delay among TB patients in Chiang Rai province.

1.4.6 To determine the association between stigma with patient delay among TB patients in Chiang Rai province.

1.4.7 To determine the association between pattern of health seeking behavior with patient delay among TB patients in Chiang Rai province

1.5 Research Hypothesis

1.5.1 Null hypothesis

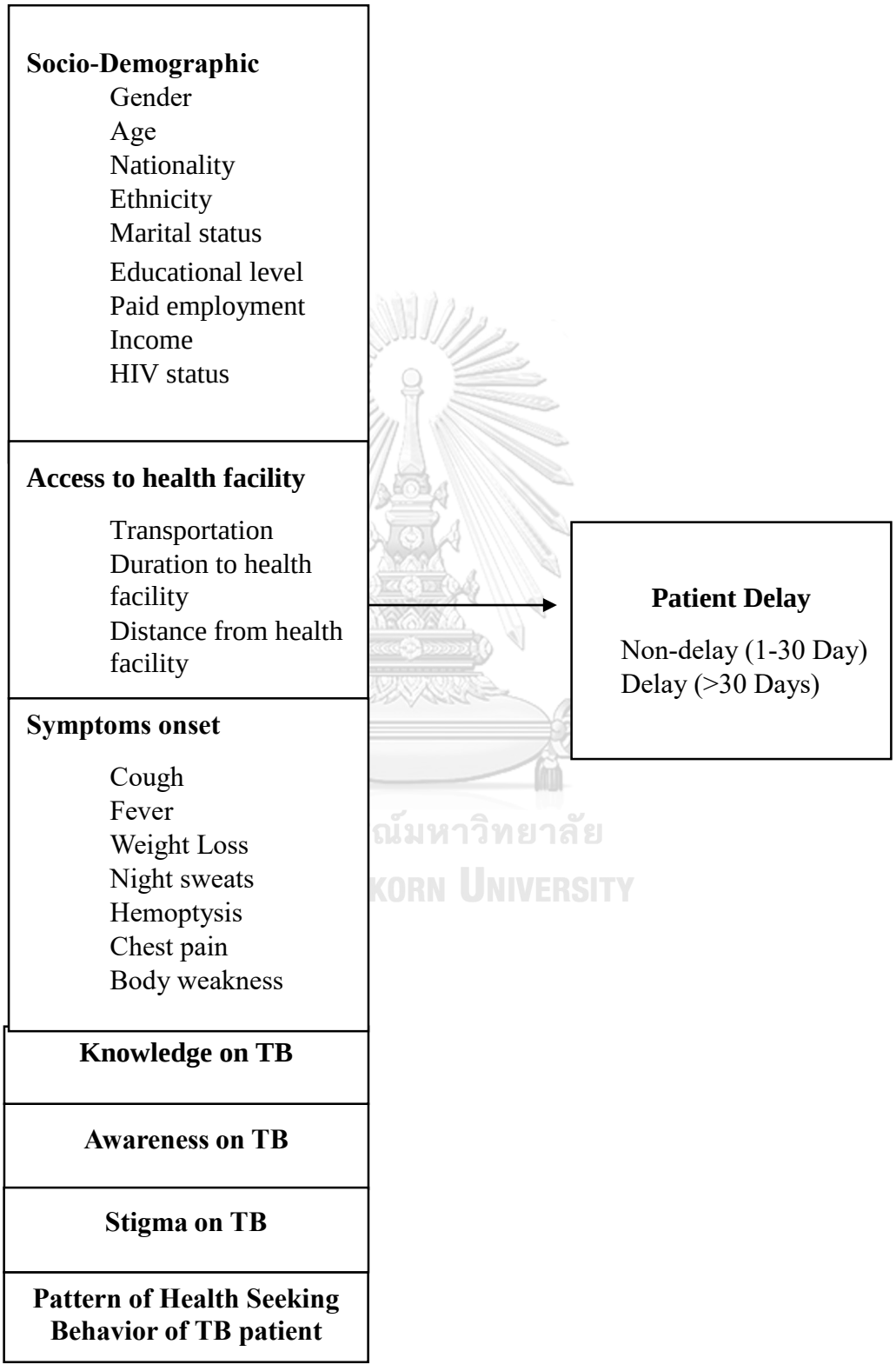
There is no association between socio-demographic, access to health facility, symptoms onset, knowledge, awareness, stigma, pattern of health seeking behavior to patient delay to health-seeking behavior among TB patients in Chiang Rai province, Thailand.

1.5.2 Alternative hypothesis

There is an association between socio-demographic, access to health facility, symptoms onset, knowledge, awareness, stigma, pattern of health seeking behavior to patient delay among TB patients in Chiang Rai province, Thailand.

1.6 Conceptual framework

Independent variable **Dependent variable**



1.7 Operational Definition

Age: age of TB patients in year

Sex: gender of TB patients refers as male or female

Educational level: the highest educational level of TB patients.

Paid employment: TB patients got remunerated by wages and salaries.

Financial status: income status of TB patients which defines as savings, suffice and in debt.

Access: the access to health services of TB patients including distance, duration and transportation to health service or health facility.

Marital status: Marital status of TB patients which includes married, single, divorced/separated and widowed.

Nationality: the nationality of TB patients.

Ethnicity: the belonging of TB patients to a social group that has a common cultural tradition.

HIV status: HIV status of TB patients which defined as positive or negative.

Knowledge of TB: the understanding on information regarding TB infection and disease.

Awareness of TB: the perception of the TB patients about TB infection and disease.

Stigma of TB: a mark of disgrace associated with a TB disease by TB patient.

Patient Delay: refers to the time of more than 30 days from onset of first symptoms to first seeking a medical professional from a government hospital for TB treatment.

Health facility: The place where the TB patients seek TB treatment and got initial diagnosis.

Pattern of health seeking behavior: a sequence of remedial actions that TB patients undertake from the time of onset of an illness and getting in contact with a healthcare professional and/or type of healthcare provider that TB patients sought help from.

1.8 Expected Benefit

1.8.1 To gain more knowledge on delay health seeking behavior among TB patients in Chiang Rai province, Thailand.

1.8.2 The information of the pattern of health facility utilization can use for planning to find the missing TB patient.

1.8.3 The results and information from this study can facilitate the planning/improving the services and treatment for TB patients in Chiang Rai province, Thailand.

1.8.4 The information can be applied as a guideline for further study.

Chapter 2

Literature review

The literature review of "Delay in Health Seeking Behavior among TB Patients" in Chiang Rai Province, Thailand will be presented as following.

2.1 General information of tuberculosis

2.2 Health seeking Behavior

2.3 Delay tuberculosis patient

2.4 Health facility

2.1 General information of tuberculosis

Tuberculosis (TB) is one of the oldest diseases known to epidemiology in humanity. It is a highly contagious respiratory infectious disease. Tuberculosis can spread by droplet and secretion by a patient. This disease has caused by a bacterial microorganism called Mycobacterium tuberculosis (1). TB is one of the most common diseases in immunocompromised individuals such as HIV/AIDS. TB involves a course of antibiotics which lasts for six months. It is important to finish the entire treatment to prevent treatment failure, which can cause the development of antibiotic-resistant tuberculosis (6).

2.1.1 Symptoms and signs

Symptoms and signs of pulmonary tuberculosis has most effect respiratory tract which a cough, sputum, hemoptysis, breathlessness, weight loss, anorexia, fever, malaise, wasting.

Symptoms effect of the respiratory tract.

Cough: most symptoms that have acute infection and can cure in 1 or 2 weeks. If the patient has a cough more than 2 – 3 weeks, the patient must screen by sputum test. The sputum of TB patient does not

have special characteristic. In some case has blood or a small point in sputum.

Chest pain: most common symptoms in TB patient. This symptom may be affect by Pleurisy or cough fracture.

Dyspnea: difficult or labored breathing, shortness of breath. Dyspnea has cause which lung in faction with Mycobacterium tuberculosis, has complications of lung. In some case has wheezing.

Symptoms of another system.

Evening fever: The TB patient has a fever in evening and has a temperature more than 38.3. In some case has fatigue dizziness.

Night sweats: The patient has more sweats at night and sleepless.

Weight loss: In TB patient has rapid weight loss(7-9)

2.1.2 Diagnosis

TB has many technical for diagnose which physical examination and laboratory.

Physical examination: Symptoms and signs of suspected pulmonary tuberculosis. Chronic cough, especially if cough more than 3 weeks or bloody cough. For other symptoms which fatigue, fatigue, anorexia, weight loss by unknown causes, night sweats or chest pain may be a symptom of tuberculosis, but less specific than cough.

Chest X-ray is a very specific examination. The disorder may not be caused by tuberculosis; it may be a shadow on the film. It is a tumor or cancer or caused by other infectious diseases. Pulmonary TB always required in combination with sputum. To avoid misdiagnosis missed and unnecessary treatments.

Tuberculin skin test is done by injecting a small amount of tuberculin into the skin of the arm. The patient will be advised to return

within 48 to 72 hours for the health care provider to check the arm to see if the bumps or densities of the skin have developed. These can be difficult to feel, and experienced health provider should investigate the reaction. The health provider will measure the impact or sensitivity and tell you whether your test response is positive or negative. If it is positive, it usually means that you have been infected with TB germs.

The presence of acid- fast bacilli (AFB) on sputum, mucus, or other specimens often indicates tuberculosis. Acid-fast microscopic is quick and easy. However, the diagnosis of tuberculosis is not confirmed because rapid acid-fast-bacilli are not tuberculosis of M. tuberculosis, so the culture is made in the first instance to confirm the diagnosis. Positive culture for confirms diagnosis. The culture on all items, regardless of AFB smear, should be inspected. The laboratory should report positive effects on smears and cultures within 24 hours(10).

2.1.3 Treatment

If the patient is the full course of treated. The recipe and medicine are gone, but patients return. Relapsed from tuberculosis. In some case use the short-term course. The doctor sends sputum before starting the drug for test the susceptibility drug. In cases where the patient is not receiving regular medication or fail treatment or not fully or partially. In cases where the patient is not receiving regular medication or fail treatment or not fully or partially. It is expected that the drug may be resistant to some drugs but not multiple drug resistant (MDR-TB). The drugs are used for treatment TB which Isoniazid (H), Rifampicin (R), Pyrazinamide (Z) and Ethambutol (E). In general, the patient has diagnosed to non-drug resistance TB, the doctor will start course to use 2HRZE/4HR. The six-month treatment course was Isoniazid Rifampicin Pyrazinamide and Ethambutol for the 1-2 months, 4 months after Isoniazid and Rifampicin (11).

Relapse is defined as a TB patient who was declared cured or treatment completed by a physician. A patient is said to relapse if they

become and remain culture negative whilst on TB treatment, but become culture positive again after finishing their TB treatment.

Failure is any TB patient who is smear positive at 5 months or more after starting treatment. TB treatment fails because a patient doesn't take their TB drugs correctly. There have many different reasons for TB treatment failure. The failure can lead to the development of multidrug-resistant tuberculosis. The three main causes of TB treatment failing which relate to the actions of doctors in prescribing incorrect regimes, the fact that there may be problems with the drugs being delivered, and that patients for many reasons may not have a sufficient intake of the drugs (12).

2.1.4 Multidrug-resistance tuberculosis (MDR- TB)

Multidrug-resistant tuberculosis (MDR-TB) caused by resistant to both isoniazid and rifampicin with or without resistance to other drugs is among the most suspended components of the pandemic of antibiotic resistance. MDR-TB has less 3 percentage for new case (13).

2.2 Health seeking Behavior

Health seeking behavior is preceded by a decision-making process that is further governed by individual and/or household behavior, community norms and expectations as well as provider-related characteristics and behaviors. So, the nature of health seeking is not only depending on cognitive and non-cognitive factors. The health-seeking behavior is a contextual analysis of health seeking behavior. The context may be a factor of cognition or awareness, socio-cultural as well as economic factors (6, 14, 15).

Health-seeking behavior has been defined as the activity undertaken by individuals who perceive themselves to have a health problem or to be ill for the purpose of finding an appropriate remedy. Information on health seeking behavior and health care utilization has important policy implications in health system development. People seek help on health issues based on several reasons

and the factors which influence the choice of treatment sources when symptoms occur include socio-cultural factors, social networks, gender and economic status. Access to healthcare facilities in terms of cost of treatment and healthcare provider attitude are also determinants of health seeking behavior. There are indications that cost of prescribed medicines, poor access to facilities and patient delays affect the patronage and utilization of public health services which increase the use of other treatment sources which community pharmacies, drug store, Traditional medicine, religious or spiritual care organizations and students in health-related academic disciplines(16).

2.2.1 Health seeking among TB patient

The health seeking among TB patient can define by finding which Knowledge and perception of TB patients regarding TB and health services for TB, Delays in seeking help, Facility-based health seeking behavior, Reasons for not seeking care or Delay in seeking care, the Geographical pattern of health seeking, Socio-cultural factors associated with health seeking and Gender based health seeking behavior. Required level of knowledge and positive health behavior helps the patients in taking timely help from the appropriate health facility (17). The study has related with study in Chiang Rai, Thailand about health seeking behavior and diagnosis for pulmonary tuberculosis. Find that being married or widowed and being shortest patient delay. Health system delay was significantly longer in female patients than male patients (18).

2.2.2 Factors influencing health seeking behavior among TB patient

Delays patient in public health facilities after the onset of symptoms are significant and the main contributing factor to this delay are the perceived good quality of services offered in public health facilities, treatment private clinics, and stigma associated with the disease. Delays are not related to the socio-demographic characteristics of TB patients, knowledge of tuberculosis, distance and transportation costs to the nearest public health facility (19). But difference with the study of care seeking behavior pattern of TB patient. This study has 168 patients with TB by diagnosis. Find 32 patients have start disease around 4 weeks. 50% has

knowledge of the agent of the disease and 60% had some idea of the mode of transmission. 105 patients who presented and were diagnosed start disease around 12 weeks, 97% has no knowledge of the agent and 95% had no idea of the mode of transmission. Overall the knowledge has significant with health to the delay in early and accurate diagnosis of most of the cases (20). Furthermore, this study found that the most pulmonary tuberculosis had visited the modern healthcare facility. However, the proportion of participant who had taken traditional measures still higher. The socio-demographic which age, educational level, occupation and having the previous history of TB treatment was associated with visiting modern healthcare facilities (21).

From the literature review the socio-demographic, knowledge and awareness is important find because they are the factor influencing health seeking behavior. The objective of this study is find the factor associated with the health seeking behavior and delay TB patient.

2.2.3 Knowledge and awareness of TB

In Thailand, cross-sectional study. The study about high AIDS awareness may cause tuberculosis patient delay results from an HIV epidemic area in Chiang Rai. Find in HIV/AIDS, high endemic situation increased awareness and inadequate knowledge of TB can result in the delay in seeking TB care and in treatment non-adherence (22). Related with the study about the respondents believed TB to be curable as long as one complied with the treatment. In this study, almost 85% had a good knowledge of the mode of transmission of the disease, but only 60% had good knowledge of the treatment duration (23). In this factor has support by the study Care seeking behavior pattern of TB patient. Find the knowledge has significant with health to the delay in early and accurate diagnosis of most of the cases (20). The awareness is one of important factor related with the previous study finds perceived severity of the disease is the most important determinant of seeking health care or visiting a health facility in Ghana (24).

In conclusion for literature about knowledge and awareness are important which TB by the previous study. The knowledge and awareness have associated with delay treatment in TB patient. The patient who does not knowledge and awareness will be delay treatment. Therefore, the objective of the study is finding the factor that associated with delay in health seeking behavior of TB patient.

2.2.4 Stigma of TB

The stigma has been shown to hinder people from early seeking healthcare because they fear of been diagnosed to have TB. Same the study in Pakistan found that stigma exists in a society, 27% of respondents reported it, and both men and women were equally affected. People delayed seeking health care for the fear of being stigmatized (25). Furthermore, has related with study the factors associated with patients delay include a lack of medical insurance, perceived stigma, and making multiple healthcare encounters (26). Thailand, Chiang Rai province has study in HIV/AIDS high endemic situation. The stigmatization of AIDS can result in delay in seeking TB care and in treatment non-adherence (22).

In conclusion for literature review about health seeking behavior of TB patient. In the first phase, TB patient chooses the way for treatment by themselves because has symptoms as same as the common cold which a cough. The patient having chronic symptoms has changed health seeking behavior. Some patients choose visit hospital but some people still self-medication. All patient after having severe and aggressive symptoms. The health seeking behavior of TB patient can conclude which knowledge, awareness and stigma is the factor influencing delay TB patient. So, this study uses to find factor follow which knowledge and awareness, stigma and health seeking behavior.

2.3 Delay tuberculosis patient

The delay patient can define 4 causes. These are defined as follows.

2.3.1 Diagnostic delay is time interval between the onset of symptoms and delay for diagnosis TB. Delay in tuberculosis diagnosis may lead to the patient developing to MDR-TB which is difficult to treat and contribute to increasing the cost of treatment. The study finds only 25.5% of the patients reported having been diagnosed within 4 weeks since initiation of symptoms that means 74.5% of the patients delayed starting treatment. It was found that the median time for delay was 7 weeks (5). Related with the study in Thailand about help seeking of TB patient. The TB patient has 3 phases including 1). The patient having common symptoms and illness like common cold. Almost patient chooses for self-medication and treat by themselves. 2). the patient having chronic symptoms. Some patients remained to do self-care and to have help-seeking for treating and alleviating the symptoms, and some decided to attend hospital for investigation and advanced treatment. 3) Having severe and aggressive symptoms. All patient decided to attend hospitals for appropriate treatment (27).

2.3.2 Treatment delay is time interval between tuberculosis diagnosis and initiation of anti-tuberculosis drugs. From the cohort study about treatment delay of tuberculosis. Find Patients were asked when the first symptoms of the disease occurred and what the initial symptoms. From the responses, it was often difficult to make a clear time of the first contact to a healthcare facility and a distinction between patient-related and health care system-related delay was not possible (28).

2.3.3 Patient delay is time interval between onset of symptom and presentation to a health provider. The patient delay is the time interval from the onset of symptoms of Tuberculosis until the first visit to any formal health care facility within 30 days as cut off point (29). The patient finds the way for treating the diseases after has onset symptoms by the consult with a health provider or people that believe. The patient delay will finish after

diagnosis with TB. So, the health provider is the person who can diagnose TB and has TB test positive.

2.3.4 Health care system delay is time interval between the date of health-seeking behavior at a health provider and the initiation of anti-tuberculosis treatment (4). Relate with the study about health system delay among patients with tuberculosis. Provider factors were an initial visit to health provider not specialized in TB but the visit to primary health care or medical center are the factor of Health system delay. The longer distances from the initial visit to treatment were associated with longer health system delay. The patients who switched to different levels or different types of health care services during their illness exhibited the longest health system delay (30). The study in Thailand study about the delay in pulmonary tuberculosis. Find has sixty inpatients were identified. 45% and 30% of patients were admitted. There was delay in suspicion of pulmonary tuberculosis and delay in isolation in 30% and 40% of patient (31).

The TB patient has classified to delay TB patient by has late for treatment more than 30 days. The delay patient has delayed by 4 component which patient delay, diagnosis delay, treatment delay, system delay. In this study focus on the delay by the patient and find the pattern of health seeking and health facility in TB patient.

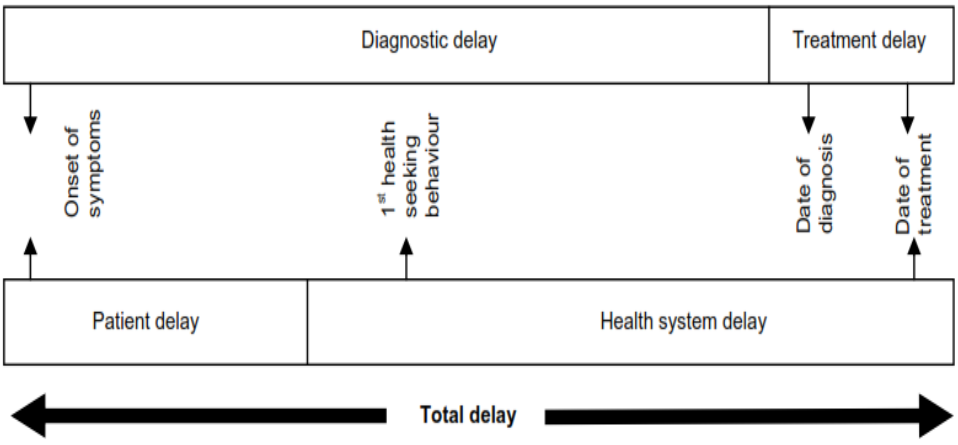


Figure1: The different delay durations contributing to the total delay (4).

2.4 Health facility

Health facility is, in general, any place has health care. Health facilities range from small clinics and doctor's offices to urgent care centers and large hospitals with emergency rooms and neatly wounded centers. Health facility can be a government sector and private sector which primary health-care centers, hospitals, isolation camps, feeding centers, burn patient units, primary health-care and others. In emergency situations, health-care facilities are often faced with an exceptionally high number of patients, some of whom may require specific medical care (32, 33). Form the cross-sectional study of Health-seeking behavior and student perception of health care services. Find the student choose to treat by themselves by sought help from community pharmacies (easy to access) and from peer's consultation (34). The study about Quality of Tuberculosis Care in Private Health Facilities. The finding is almost people 75% chooses the private hospital because patient thinks private hospital has a quality of treatment (35).

About health facility of TB patient. Almost the people choose health facility where an easy to access. The patient has the reason to decide to treat in the health facility which quality, safety and an easy to access. Therefore, the health facility is important to find the pattern of TB patient if the people who have TB disease treatment late. The patient will be classified as delay TB patient. The aim of this study is find the pattern of health seeking behavior among TB patient and association between the socio-demographic and knowledge, attitude, and health seeking behavior among TB patients

Chapter 3

Methodology

3.1 Research design

The research design was a cross-sectional study using questionnaires on socio-demographic characteristics, information on access to health facility, symptoms onset, knowledge, awareness and stigma regarding TB, pattern of health seeking behavior, and patient delay to health seeking behavior among TB patients in Chiang Rai province, Thailand.

3.2 Sample size

The formula used to calculate the sample size in this study when knowing the exact population is the formulation from Krejcie and Morgan (Krejcie, Morgan, 1970).

Krejcie & Morgan sample size

$$n = \frac{NZ^2_{\alpha/2}p(1-p)}{[e^2(N-1)]+[Z^2_{\alpha/2}p(1-p)]}$$

$$n = \frac{1{,}725(1.96)^2(0.50)(1-0.50)}{[(0.1)^2(1{,}7251)]+[(1.96)^2(0.50)(1-0.50)]}$$

$= 91$

$N = 1{,}725$

$p = 0.50$

$Z_{\alpha/2} = 1.96$ at 95%CI

$e = 0.10$

To prevent data missing. (20%)

$n = 110$

Sample random sampling

The study design was multi-stage sampling. Chiang Rai province has a total of 18 hospitals (Table 1). Four border hospitals including Chiang Sean hospital, Mae Sai Hospital, Wiang Kean, and Chiang Khong Hospitals were selected for data collection (Table 2).

Table 1 the total number of TB patient in Chiang Rai, 2017

Hospital	Total number of TB patient in 2017
Khun Tan Hospital	20
Chiang Rai Hospital	720
Chiang Saen Hospital	51
Thoeng Hospital	56
Pa Daet Hospital	20
Pa Ya Meng Rai Hospital	38
Phan Hospital	116
Mae Chan Hospital	150
Mae Fha Luang Hospital	59
Mae Lao Hospital	24
Mae Suai Hospital	73
Mae Sai Hospital	178
Wiang Kean Hospital	23
Wiang Chiang Rung Hospital	31
Wiang Pa Pao Hospital	58
Som Dege Hospital	25
Chiang Khong Hospital	62
Doi Luang Hospital	21
Total	1,725

Sampling with probability proportion to size

Table 2 shows the size of the sample by the number TB patients in four border hospitals that are selected according to sampling with probability proportion to size.

Table 2 the total number of TB patient in 4 border hospital Chiang Rai, 2017.

Hospitals at border areas	Number TB patients	Number of samples
Chiang Saen Hospital	51	18
Mae Sai Hospital	178	62
Wiang Kean Hospital	23	8
Chiang Khong Hospital	62	22
Total	314	110

3.3 Study population

The participants in this study were TB positive patients that had been diagnosed or currently receiving treatment from the selected hospitals, Chiang Rai province, Thailand as listed in Table 2

3.4 Inclusion criteria

3.4.1 Patients who age more than 18 years old and above.

3.4.2 Both genders; male and female

3.4.3 Including hill tribe and ethnicity

3.4.4 Does not has problem in communication such as deaf and dumb.

3.4.5 Diagnosis with Pulmonary TB

3.4.6 Receive treatment in selected hospitals listed in Table 2.

3.4.7 Living in Chiang Rai province over 6 months.

3.4.8 Willing to participate and sign the informed consent.

3.5 Exclusion criteria

3.5.1 Participants want to withdraw or stop to answer the questions.

3.6 Study area

This study was collect the data from border hospitals in Chiang Rai province, since these were the only four border hospitals in Chiang Rai province, Thailand.

How to approach border hospitals.

The researcher had contacted the responsible medical officers on TB patients in the four border hospitals included Chiang Sean hospital, Mae Sai hospital, Wiang Kean hospital, and Chiang Khong hospital, and sent the permission letters to Chiang Rai provincial chief medical officer and to all the directors of these four border hospitals.

3.7 Study period

Time for data collection from 1 May to 31 June 2018

3.8 Sampling technique

This study used a purposive sampling for data collection. The researcher will stand by to collecting the data from TB patients that come to receive the treatment at the TB clinics in the hospitals and followed with the inclusion and exclusion criteria.

3.9 Measurement Tools

This study applied the questionnaire from WHO using case-finding in tuberculosis patients. Diagnostic and treatment delays and their determinants (WHO, 2006) for finding the association of Socio-Demographic, Knowledge, and Awareness, Stigma, Patient delay with Pattern of health seeking behavior as followed:

Part 1 General and demographic had 14 questions

This part use to find the socio-demographic characteristics of TB patients including age, sex, educational level, occupation, income, access (duration and

transport) to health services or health facility, marital status, nationality, ethnicity, HIV status and patient delay.

Part 2 Knowledge of TB has 10 questions

Variables measuring knowledge were recorded on a 2-point Dichotomous scales. This use to find about knowledge of TB patient for find percentage and frequency of score in patient.

Scoring system for knowledge questions

1 = Right

0 = Wrong

The total knowledge of TB score ranges from 0-10 points. Bloom's cut-off point was used to classify the participant's knowledge score into 3 categories as mentioned below

- Poor = <60% (< 6 score)
- Moderate = 60-80% (6-8 score)
- Good = (>80%) (>8 score)

Part 3 Awareness of TB has 5 questions

Variables measuring awareness were recorded on a 3-point Likert. This part use to find about awareness of TB patient for find percentage and frequency of patient who has awareness about TB disease.

Scoring system for awareness questions

1 = Yes

0 = No

0 = Not know

The answers from all participants were summed up and calculated for mean and standard deviation. The awareness of TB patients participated in this study was categorized as:

- Low awareness = Score ≤ mean - standard deviation
- Moderate awareness = Mean - standard deviation < Score < mean + standard deviation
- Good awareness = Score ≥ mean + standard deviation

Part 4 Stigma of TB has 10 questions

This part used to find the stigma of TB patient for find the TB had stigma to patient.

Scoring system for stigma questions

5 = Strongly agree

4 = Agree

3 = Average

2 = Disagree

1 = Strongly disagree

Variables measuring stigma were recorded on a 5-points Likert scale for individual items scoring as 1 representing the least (strongly disagree) and 5 representing the most (strongly agree) stigma. A raw summary score was computed for each scale as the sum of scale item responses. The raw summary scores were mathematically transformed into a standardized summary score; therefore, the level of stigma on each of the five stigma scales would lie between 10 and 50, with higher scores representing higher levels of stigma. This will be achieved using the formula Standardized summary score = (raw summary score × 50)/ (n × 5); where n represents the number of items in the respective scale and 5 equals to the maximum score that can be achieved for each individual (36). The mean and standard deviation of the standardized summary score in from the participants were calculated and represented as the distribution of the standardized summary score. The stigma of TB patients was then categorized into two groups as “low stigma” and “high stigma”. For low stigma, it referred to the participants who scored below mean. The participants who scored above mean were categorized as having high stigma (37).

Part 5 Health seeking behavior with onset of symptoms

This part was to find the health seeking behavior of TB patients in health care services before initial diagnosis. Additionally, the percentage and frequency of the facility where the TB patients used when the onset of symptoms occurred were assessed.

Part 6 Health facility of the health care provider whom you first sought consultation

This part used to find health facility or any health seeking treatment of TB patients before initial diagnosis and the rank of the health facility or health seeking treatment utilized by TB patients were determined.

Validity

The questionnaire used in this study was modified from WHO (4) and validated by three experts in public health field to ensure the content validity. The validity of the questionnaire was examined by the Item Objective Congruence index and required for each questioned to score more than 0.5 to use in this study.

Reliability

The pilot test of the modified questionnaire was to establish the clarity of the questionnaire. The Cronbach's alpha for scale reliability was applied to test the internal consistency with 30 participants to perceive the questionnaire's problems, unavailable of the questions, inability to interview, and preparing research process. The Cronbach's alpha coefficient was calculated and the result was 0.720.

3.10 Data Collection

Face to face interview was employed for the data collection with a structured questionnaire by the researcher and one research assistant, who graduated with the bachelor's degree in public health and experience in surveillance system around the border areas. Prior to the data collection, the research assistant was trained by the researcher to understand the objective of this study and the questionnaire used in this study, participants' selection, face to face interview process, and to conduct the interview without any suggestion or leading the participant for the answer. The research assistant was also trained on how to explain the participants about the study's objective, participant's confidentiality, and freedom to remove themselves from the study. The interview session was approximately 30 minutes. Each participant was provided with the details of this study and asked for informed consent before

beginning the interview. At the end of every day, the researcher re-checked the filled questionnaire on the complete and consistency of the answer.

Translator

In this study, the translators were the people accompanying non-Thai speaking TB patients to the health facility. The translators are able to communicate in Thai and were assisted in translation of the questions asked by the interviewer to non-Thai speaking TB patients and also translated the patient's answers back to the interviewer.

Medical record

In this study, the medical record of the TB patients was assessed by the researcher after the director of the hospital approved and gave the permission to use the record. In order to protect health privacy and confidentiality of the TB patients, the researcher used only TB number to find the information in the medical record. The medical record has collected by health provider in government hospital. The medical record was used to answer the questions in the questionnaire included question about when TB started, when the treatment started, and HIV status of the TB patient. The information relating to the patient are kept confidential. Any information that can identify the patient will not appear in the report. Upon completion of the research, the questionnaire related to the patient in this research was destroyed.

3.11 Data Analysis

After the data collection, questionnaire was coded. The responses were given codes and entered for computer analysis. This was analyzed using a computer package, SPSS.

Descriptive statistic

In part of descriptive statistic, the categorical data were analyzed using percentage and frequency. For continuous data, mean and standard deviation were used for data interpretation.

Inferential statistic

In this study, the bivariate analysis was performed to analyze the association between independent variables in this study and dependent variable (patient delay: delay and non-delay). For categorical data, Chi-square test was used to analyze the association between independent and dependent variable. If Chi-square test was not met with the assumption (cell less than 5 more than 20%), Fisher's exact test was used. For bivariate analysis, the significant of p-value was at < 0.2. The independent variables those had p-value <0.2 were included in multivariate analysis by performing binary logistic regression as seen with significant of p-value considered at < 0.05.

3.11 Ethical Consideration

3.11.1 The researcher explained the purpose of the study to all participant.

3.11.2 The participants will be informed that they have the right to refuse to participate in the study and can stop their participation at any time.

3.11.3 The participants will be asked to sign the informed consent before the interview.

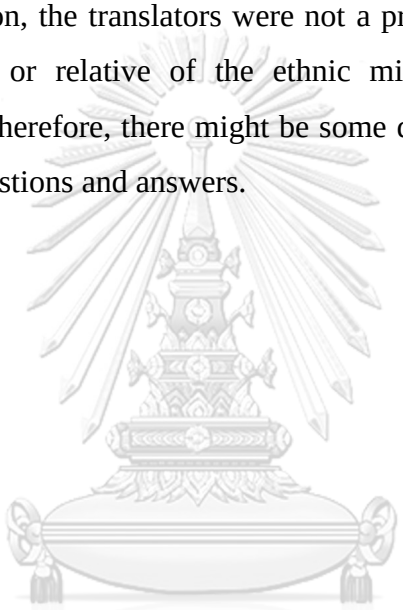
3.11.4 All information obtained in connection with the study has remained as the confidential documents and protected from any access by third parties.

3.11.5 The researcher is only available to ask the questions base on Ethics Committee of Chulalongkorn University

3.11.6 This study was approved by the Ethics Review Committee for Research Involving Human Research Subjects, Health Science Group, Chulalongkorn University (COA 166/2018) and Chiang Rai Provincial Public Health Office (CRPPHO 27/2561).

Limitation

This study included both old and new cases of TB patients who came to receive the treatment at the four selected border hospitals; therefore, the old case TB study's participants have been receiving consultation and treatment for a longer period of time, which might lead to the better knowledge, awareness and stigma on TB disease than those who were new cases. This study collected the data in border area adjacent to Myanmar and Laos; however, Laos TB patients could not receive the treatment at hospitals in Thailand and would be reported to continue their treatment in their country. In addition, the translators were not a professional translator. They are either family member or relative of the ethnic minority TB patients, who can communicate in Thai; therefore, there might be some distortion in the back and forth translation of asked questions and answers.



Chapter 4

Results

This chapter presents the findings of this study. The study of "delay in health seeking behavior among TB patients in Chiang Rai Province, Thailand" collected data from 103 participants who were registered with TB in four border hospitals included Chiang Sean hospital, Mae Sai hospital, Wiang Kean, and Chiang Khong hospital in Chiang Rai province through structured questionnaire on socio-demographic data, knowledge, awareness, and stigma of TB, and health seeking behavior toward TB treatment in TB patients. The results of complied data were analyzed with descriptive statistic and inferential statistic for analysis the data in this study.

4.1 Descriptive statistic

The univariate analysis was used to describe participants' socio-demographic characteristics, access to health facility, symptoms onset, knowledge, awareness, and stigma on TB, pattern of health seeking behavior, and patient delay in TB treatment from health professional and initial diagnosis.

4.1.1 Socio-demographic characteristics of study's participants

The socio-demographic characteristics of the 103 TB patients who participated in this study were shown in Table 1.1 and Table 1.2. In Table 1.1, general characteristics of participants included gender, age, nationality, ethnicity, and marital status were shown in frequency and percentage. The results showed that majority of the participants were male (65%). Almost one-third of the participants were age more than 60 years old (27.2%) and 23.3% were age between 51-60 years old. Mean age 50.68 years old, minimum age at 20 years old and maximum age of 86 years old. For the participants' nationality, more than half (61.2%) of the participants were Thai; while 32% of the participants were belonged to ethnic minority and 6.8% were Myanmar. For the ethnic minority, Akha was found to be the largest population in this study with 12 TB patients (36.4%) from a total of 33 ethnic minority. The second

individual ethnicity was Tai Lue with 18.2%, and third was tied with Thai Yai and Mahong at 12.1%. Nonetheless, seven TB patients (21.2%) were belonged to other ethnicity. Whereas, the majority of TB patients in this study was single (61.2%). Alarmingly, more than half of the study's participants (65%) were delay in seeking professional treatment.

Table 1.1 Socio-demographic characteristics (gender, age, nationality, ethnicity, and marital status) of the tuberculosis patients who participated in the study (n=103)

General characteristics	Frequency (n)	Percentage (%)
Gender		
Male	67	65.0
Female	36	35.0
Age group		
Less than 20 years	1	1.0
21-30 years	11	10.7
31-40 years	19	18.4
41-50 years	20	19.4
51-60 years	24	23.3
More than 60 years	28	27.2
Mean ± SD	50.67±15.98 Years	
Min./Max. age	20 / 86 Years	
Nationality		
Thailand	63	61.2
Ethnic minority	33	32.0
Myanmar	7	6.8
Ethnicity (n = 33)		
Akha	12	36.4
Thai Lue	6	18.2
Thai Yai	4	12.1
Mahong	4	12.1
Others	7	21.2
Marital status		
Married	24	23.3
Single	63	61.2
Widowed	12	11.7
Discovered	4	3.9
Patient Delay		
Delay	67	65.0
Non-delay	36	35.0

Table 1.2 presents the general characteristics of participants included educational level, financial status, paid employment, and HIV status. Approximately 48.5% of participants were reported to have no formal education background. Nevertheless, 33% of the participants received primary school education, and 12.6% reported to have high school education. Moreover, the participants who received diploma and college education were accounted for 2.9% each. For the financial status of the participants, 65% were indicated that they had sufficient income, and 23.3% were stated that they had financial status as saving; while only 11.7% were said to be in debt. More than half of the participants (54.4%) were paid employment, and most of the participants (85.4%) were negative for HIV.

Table 1.2 Socio-demographic characteristics (education, financial status, paid employment, and HIV status) of the tuberculosis patients who participated in the study (n=103)

General characteristics	Frequency (n)	Percentage (%)
Level of education		
No formal education	50	48.5
Primary school	34	33.0
High school	13	12.6
Diploma	3	2.9
College	3	2.9
Financial status		
Suffice	67	65.0
Saving	24	23.3
In debt	12	11.7
Paid employment		
Yes	56	54.4
No	47	45.6
HIV status		
Negative	88	85.4
Positive	15	14.6

4.1.2 Access to health facility (hospital) of TB participants

Table 2 shows the access to service and health facility of the TB participants who participated in this study. This study collected data in four hospitals located at the borders of Chiang Rai province; therefore, the variables associated with access to services and health facility (included duration, distance, and transportation) of participants were based on the hospital where participants currently received the treatment for TB.

Majority of the participant (82.5%) took less than 30 minutes for traveling to the hospital where they currently received treatment for the TB, while 12.6% of the participants took approximately 30 minutes to 1 hour to reach the hospital. Only 4.9% of the participants took more than 1 hour to get to the hospital. The distance from participant's house to hospital was varied based upon the location of the hospital. In this study, 55.3% of the participants lived within 10 kilometers from the hospital. Almost one-third of the participants (29.1%) reported the traveling distance between 11 to 20 kilometers and 8.7% for 21 to 30 kilometers. Only 6.8% of the participants required to travel over 30 kilometers to reach hospital/health facility. The participants in this study used four types of transportation (bicycle, motorcycle, car and bus). From the survey showed in Table 2 found that most of the participants (45.6%) used motorcycle. Nevertheless, transportation by car, bus and bicycle were reported as 38.8%, 12.6% and 2.9%, respectively.

Table 2 Access to services and health facility (hospital) of the tuberculosis patient participating in the study (n=103)

Access to services and health facility	Frequency (n)	Percentage (%)
Duration		
less 30 min	85	82.5
30 min - 1hr	13	12.6
Over 1 hr.	5	4.9
Distance		
0-10 km	57	55.3
11-20 km	30	29.1
21-30 km	9	8.7
Over 30 Km	7	6.8
Transport		
Motorcycle	47	45.6
Car	40	38.8
Bus	13	12.6
Bicycle	3	2.9

4.1.3 Health seeking behavior for TB treatment with the first onset of symptoms

Table 3 shows health seeking behavior for TB treatment of the study's participants when they encountered with their first onset symptoms of TB. Majority of participants (40.8%) chose to visit government hospital. Interestingly, the following choices for the participants to treat the onset symptoms, listed in order from higher to lower responses were did the self-medication (20.4%), visited private clinics (16.5%), went to pharmacy/drug store (13.6%), visited primary health care (6.8%), and went for traditional medicine (1.9%).

Table 3 Participants' health seeking behavior for TB treatment with the first onset of symptoms (n=103)

Health seeking treatment	Frequency (n)	Percentage (%)
Government hospital	42	40.8
Self-medication	21	20.4
Private Clinics	17	16.5
Pharmacy/Drug store	14	13.6
Primary health care	7	6.8
Traditional medicine	2	1.9

4.1.4 Symptoms onset of the study's participants

From table 4, it was found that the majority of the study's participants (76.7%) were reported to have experienced with cough followed by the experience of weakness (61.2%). 57.3% of the participants reported to have weight loss, while chest pain (38.8%) and fever (36.9%) were also claimed to have experienced by the study's participants. In contrast, night sweats and hemoptysis were the least onset symptoms reported by the study's participants at 18.4% and 13.6%, respectively.

Table 4 Onset symptoms reported by the study's participants (n=103)

List of experienced onset symptoms	**Yes**	
	Frequency (n)	**Percentage (%)**
Cough	79	76.7
Weakness	63	61.2
Weight loss	59	57.3
Chest pain	40	38.8
Fever	38	36.9
Night sweats	19	18.4
Hemoptysis	14	13.6

4.1.5 Knowledge, awareness and stigma toward TB patient.

The results showed in Table 5 are the frequency and percentage of the study's participants' level of knowledge regarding TB disease, which categorized into three levels included low, moderate and good knowledge. The majority of the study's participants (65%) were having moderate knowledge on TB, followed by good knowledge at 22.3% of the study's participants. Interestingly, only 12.6% of the study's participants had low level of knowledge on TB. The lowest score found in this study was 2 and maximum was 10 scores, which were the full score. The mean and standard deviation of total knowledge score of TB patients in this study was 7.38 and 1.567, respectively.

The knowledge questions for evaluating the TB patients' knowledge in this study was on the basic information of TB infection and disease, treatment, vaccine, and health services. From Table 6, it was found that most of the TB patients in this study knew what kind of disease they had, given that 102 participants from a total of 103 participants answered correctly. However, around two-third of the study's participants (62.1%) got the wrong answer when asked about whether TB is hereditary or not. While most of the participants (81.6%) knew that TB is contagious. Interestingly, a little more than half of the study's participants (52.4%) thought that TB is uncurable. While majority (57.3%) of the study's participants answered incorrectly for on availability of TB vaccine, and only 63.1% knew about drug for TB treatment. Nevertheless, almost all study's participants (96.1%) knew that TB is infectious and can be contacted by touch, knew about the approximated duration of treatment (92.2%), knew their urine color when taking drug for TB treatment (91.3%), and knew that TB can be screened in the hospitals and health centers around the country.

Table 5 The level of knowledge regarding TB of TB patients participated in this study (n=103)

Level of knowledge	Frequency (n)	Percentage (%)
Low (<60% correct answer)	13	12.60
Moderate (60-80% correct answer)	67	65.0
Good (>80% correct answer)	23	22.30
Mean ± SD	7.38 ± 1.567	
Min. /Max.	2 / 10 scores	

Table 6 Description of each knowledge question (n=103)

Questions	Correct		Not correct	
	Frequency (n)	Percentage (%)	Frequency (n)	Percentage (%)
1. What kind of disease do you have?	102	99.0	1	1.0
2. Is TB hereditary?	39	37.9	64	62.1
3. Is TB contagious?	84	81.6	19	18.4
4. Is TB curable?	49	47.6	54	52.4
5. Do you think tuberculosis can be contacted by touch?	99	96.1	4	3.9
6. Do you know if there is a vaccine for TB?	44	42.7	59	57.3
7. Do you know the approximated duration of treatment?	95	92.2	8	7.8
8. Do you know the kind of TB drugs?	65	63.1	38	36.9
9. What is the color of your urine after used drug for treatment TB?	94	91.3	9	8.7
10. Do you think the patient can screen TB from hospitals or health centers around the country?	90	87.4	13	12.6

4.5.2 Awareness of TB

Table 7 shows the frequency and percentage of the study's participants' level of awareness regarding TB disease, which categorized into three levels included low, moderate and high awareness. The majority of the TB patients participated in the study (52.43%) were having moderate awareness, followed by good level of awareness which was 26.21% of the participants. Almost in equal percentage to the good awareness, 21.36% of the study's participants had low level of awareness on TB. The lowest score found in this study was 2 and maximum was 5 scores, which were the full score. The mean and standard deviation of total awareness score of TB patients in this study equal to 4.029 and 0.733, respectively.

The awareness questions for evaluating the TB patients' awareness in this study was on the basic information of TB awareness. From Table 8, it was found that all of the TB patients participated in this study had awareness regarding the consumption of medication, given that 103 participants take medicine according to the doctor's instructions. Interestingly, 95 participants from a total of 103 participants reported to protect themselves and their family after getting TB. While most of the patients (96.1%) focus on health after they had tuberculosis. In addition, a little more than half of the study's participants (52.4%) wished to get more information about TB.

Table 7 the awareness level on TB of the TB patients in the study (n=103)

Awareness level	**Frequency (n)**	**Percentage (%)**
Low (≤ mean - SD)	22	21.36
Moderate (mean ± SD)	54	52.43
Good (≥ mean +SD)	27	26.21
Mean ±SD	4.029 ± 0.733	
Min / Max	2 / 5 scores	

Table 8 Description of awareness question (n=103)

Variable	**Yes**		**No**	
	N	**%**	**N**	**%**
1. Do you feel well informed about TB?	64	62.1	39	37.9
2. Do you wish you could get more information about TB?	54	52.4	49	47.6
3. Do you protect yourself and your family after getting TB?	95	92.2	8	7.8
4. Do you take medicine according to the doctor's instructions?	103	100.0	0	0
5. Do you focus on health after you have tuberculosis?	99	96.1	4	3.9

5.3 Stigma of TB

Table 9 presents the frequency and percentage of TB patients toward TB stigma as categorized into low and high TB stigma. The majority of the TB patients (54.4%) were having high stigma, while low stigma was accounted for 45.6% of the study's participants. The lowest score for TB stigma found in this study was 20 and maximum score was 100 scores, which were the full score. The mean and standard deviation of total stigma score of TB patients in this study was 54.85 and 16.96, respectively.

The stigma questions for evaluating the TB patients' stigma in this study was on the effect of TB stigma to TB patient as shown in Table 10. The results indicated that most of the TB patients in this study has average score of TB stigma they had, given that 36.9% of the study's participants answered that TB affect marital relation. Moreover, 38 participants preferred to live isolated since you got TB diagnosis. While most of relating to stigma was "TB affect to work performance" among participant strongly agree 25 (24.3%) and agree 33 (32%). The TB stigma was affect to family responsibilities of patient around (20.4%) and there is less chances of marriage due to TB diagnosis around one of tree (31.1) patients.

Table 9 the stigma of TB patients in this study (n=103)

Level of stigma	Frequency	Percent
Low stigma (≤mean)	47	45.6
High stigma (>mean)	56	54.4
Mean ± SD	54.85 ± 16.96	
Min / Max	20 / 100 scores	

Table 10 Description of each stigma question

Variable	Strongly agree		Agree		Average		Disagree		Strongly disagree	
	N	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**
1. Do you feel ashamed for having TB?	11	10.7	21	20.4	30	29.1	17	16.5	24	23.3
2. Do you have to hide TB diagnosis from the other people?	6	5.8	25	24.3	29	28.2	24	23.3	19	18.4
3. Does TB affect relation with the others?	15	14.6	34	33.0	17	16.5	21	20.4	16	15.5
4. Is TB very costly due to long duration of the disease?	15	14.6	18	17.5	29	28.2	25	24.3	16	15.5
5. Do you prefer to live isolated since you got TB diagnosis?	6	5.8	14	13.6	23	22.3	38	36.9	22	21.4
6. Does the TB affect your work performance?	25	24.3	33	32.0	16	15.5	20	19.4	9	8.7
7. Does TB affect marital relation?	5	4.9	13	12.6	38	36.9	19	18.4	28	27.2
8. Does TB affect family responsibilities?	10	9.7	21	20.4	16	15.5	29	28.2	26	25.2
9. Do you think there is less chances of marriage due to TB diagnosis?	6	5.8	10	9.7	32	31.1	28	27.2	27	26.2
10. Does TB affect your family relations?	6	5.8	22	21.4	16	15.5	25	24.3	34	33.0

4.1.6 Pattern of health seeking behavior of participant

The pattern of health seeking behavior of 103 TB patients who participated in this study was analyzed as shown in Figure 2 and Figure 3 (model pattern). In Figure 2, the health seeking behavior of the study's participants were separated into five main patterns which started with the first health seeking action the study's participants did when they encountered with the first onset symptoms of TB. The pattern ended when the study's participants went for the treatment at a government hospital. Note that 42 participants were not included in the analysis showed in Figure 2 since their first health seeking pattern with the first onset symptoms of TB was went to a government hospital. Figure 3 represents the model pattern of health seeking behavior of the study's participants within a single chart including 42 study's participants whose first action of health seeking behavior was a government hospital. The health seeking behavior which was the second most famous action for the study's participants after visited a government hospital were self-medication (20.4%).

In summary, the study found that every participant who visited primary health care was visiting a government hospital as their next action. Moreover, it was alarmingly that some of the study's participants took as many as five actions before visited a government hospital for professional treatment (Figure 2 and 3).

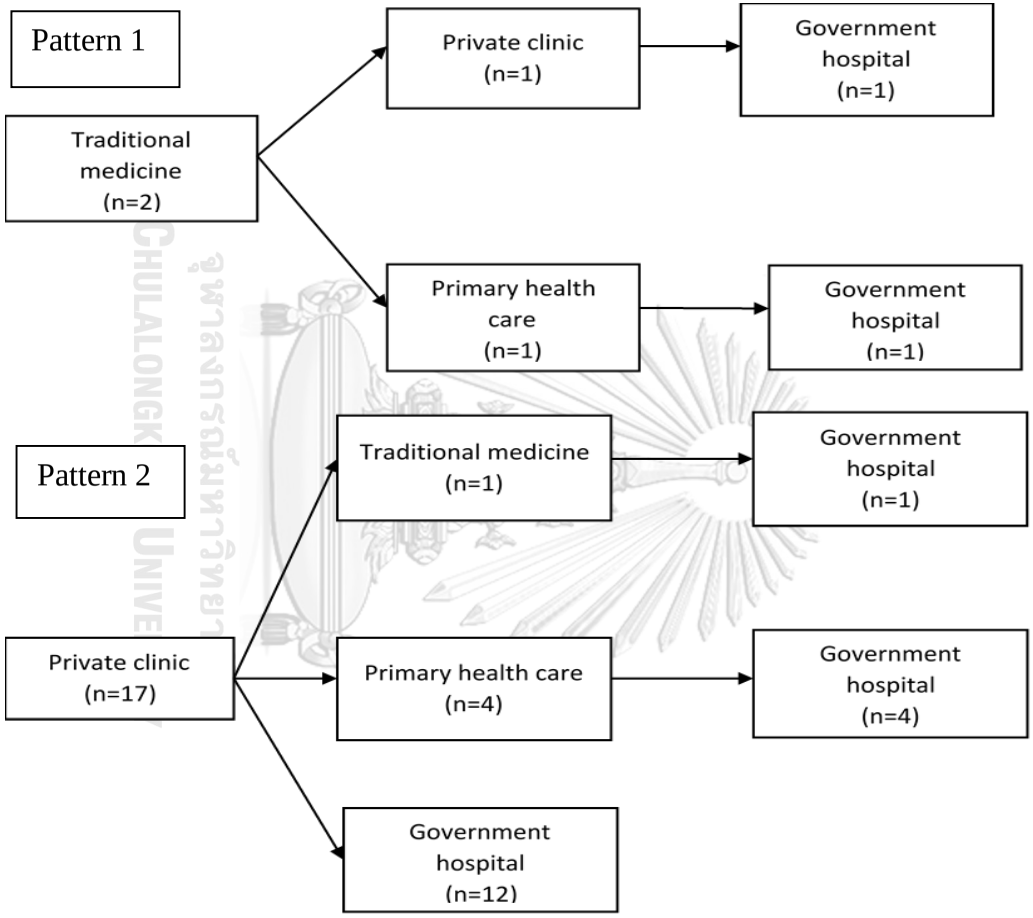


Figure 2 Pattern of health seeking behavior of TB patients participated in the study

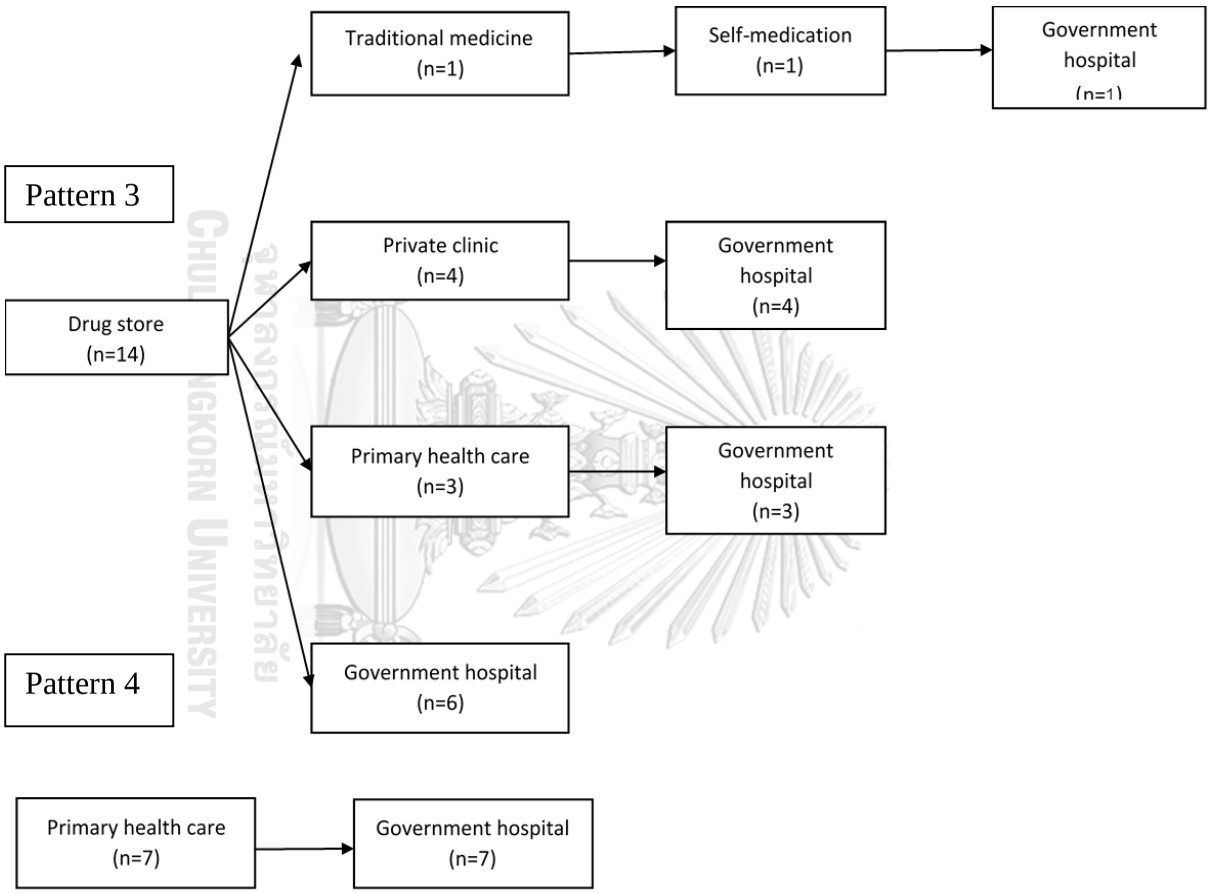


Figure 2 Pattern of health seeking behavior of TB patients participated in the study (continue)

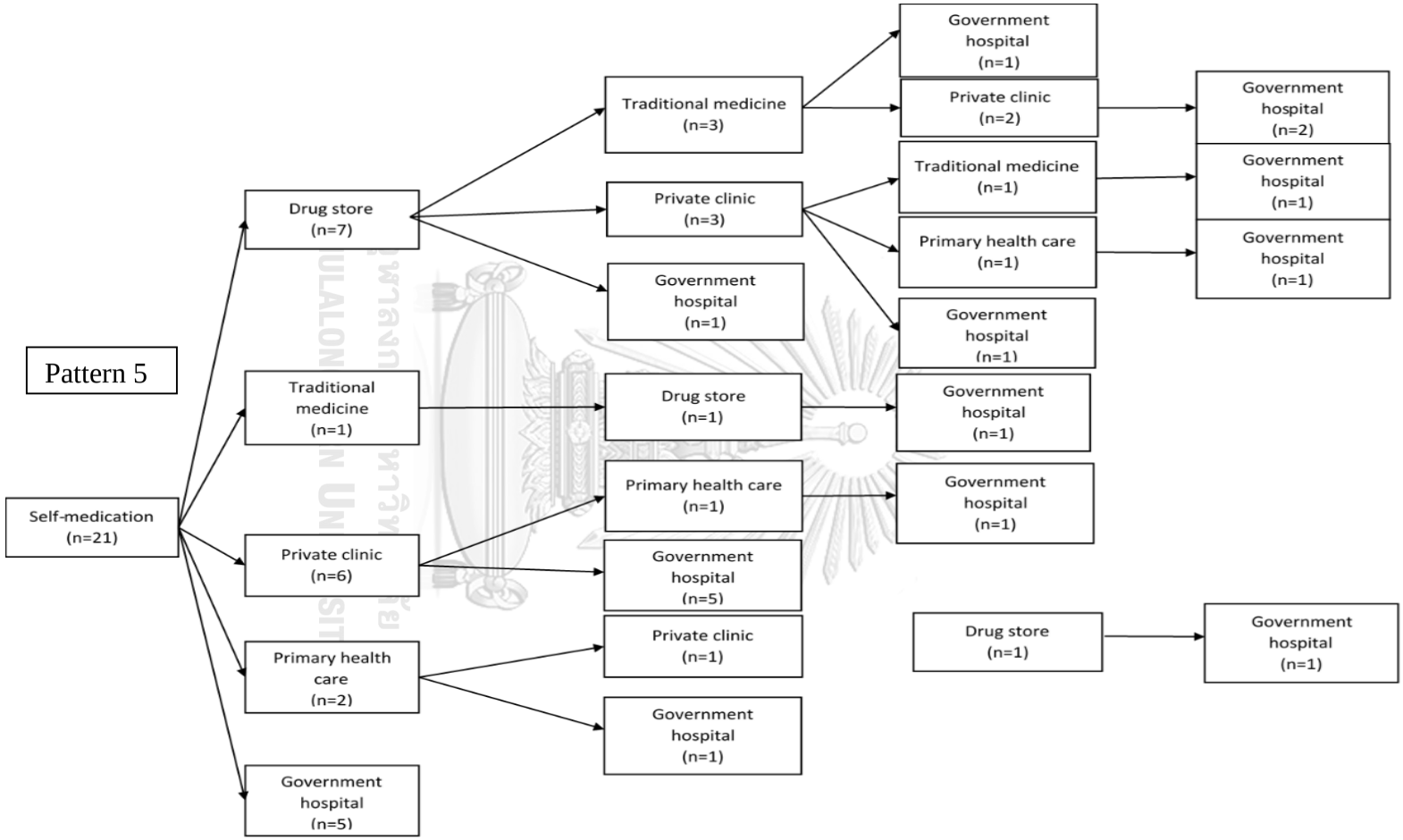


Figure 2 Pattern of health seeking behavior of the TB patients participated in the study (continue)

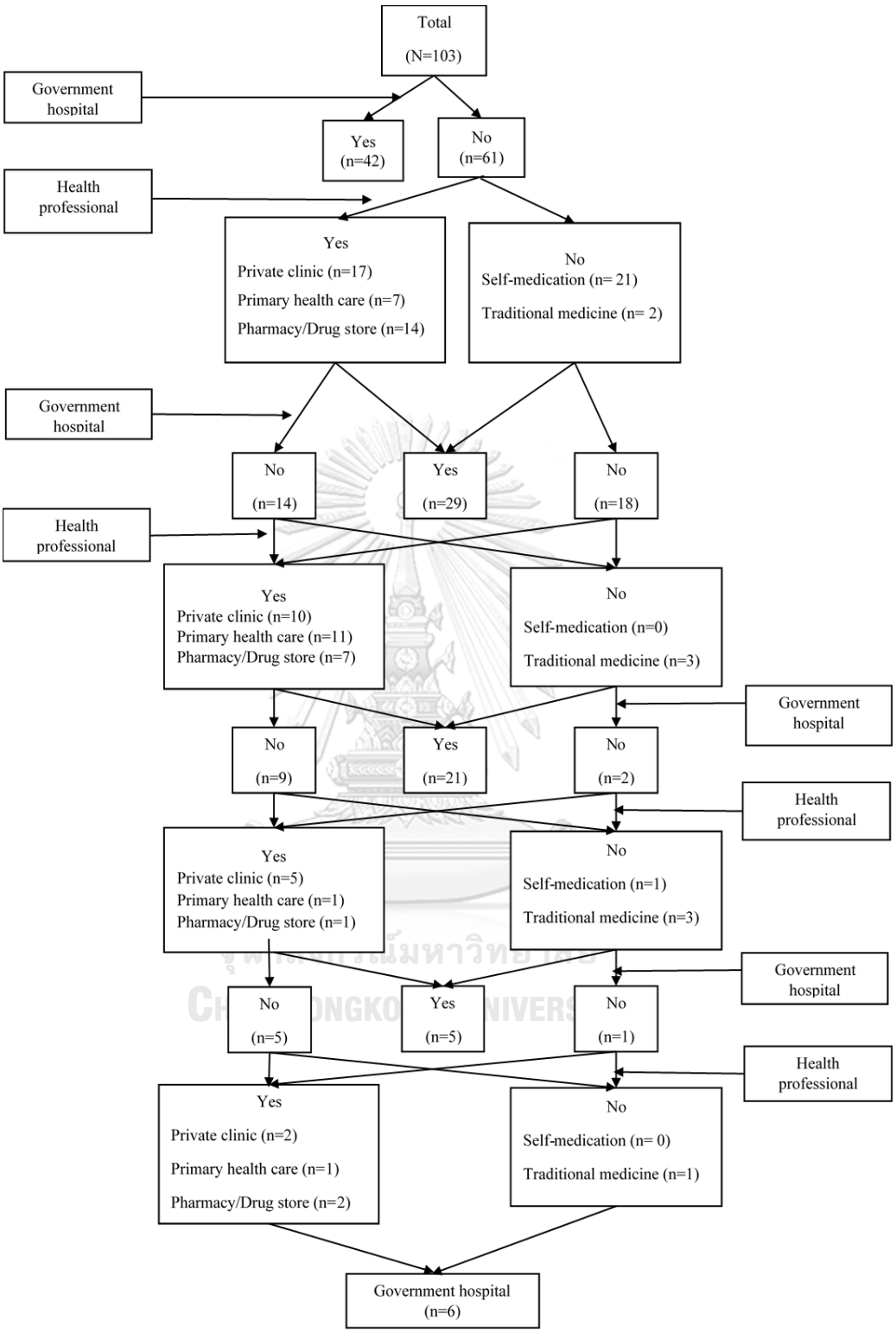


Figure 3 Model pattern of health seeking behavior of TB patients in this study

4.2 Inferential statistic

4.2.1 Association of characteristic data, knowledge, awareness, stigma, health seeking compared with delayed of Tuberculosis patients

The association relationship between the independent variables included socio-demographic, access to health facility, symptoms onset, knowledge, awareness, stigma, and pattern of health seeking behavior with the dependent variable (delay or non-delay in TB patient) were analyzed by Chi-square test with significant level at p-value <0.2.

Table 11 shows the relationship between the study's participants' characteristics (gender, age group, education, paid employment, financial status, marital status and HIV status) and non-delay/delay in TB patients. The results indicated that education and HIV status were associated with delay in health seeking behavior of the study's participants, with p-value = 0.199 and 0.057, respectively. Whereas, gender, age, paid employment, financial status and marital status were not statistically associated with delay in health seeking behavior of the study's participants at p-value>0.2.

Table 12 shows the relationship between the study's participants' nationality including ethnicity with non-delay/delay in TB patients. The result shows that the nationality was associated with delay in health seeking behavior of the study's participants, with p-value = 0.182. While Table 13 shows the relationship between the transportation, distance and duration to health facility (which was government hospitals) with non-delay/delay in TB patients. The results show that transportation and duration to government hospitals were associated with delay in health seeking behavior of the study's participants, with p-value = 0.100 and 0.049, respectively. Nonetheless, distance to health facility was not associated with delay in health seeking behavior indicated by p-value>0.2. In addition, the onset symptom (one onset symptom or more than one onset symptoms of TB) was not associated with delay in health seeking behavior of the study's participants, with p-value = p-value = 0.735 (Table 14).

Interestingly, only knowledge and stigma were found to be associated with delay in health seeking behavior with p-value = 0.07 and 0.138, respectively. Whereas, awareness was not associated with delay in health seeking behavior indicated by p-value>0.2 (p-value = 0.758) (Table 15). Moreover, the action of health seeking behavior pattern was also not associated with delay in health seeking behavior indicated by p-value>0.2 (p-value = 0.974) (Table 16).

Table 11 Relationship between the participants' characteristics and delay in TB patient.

Variable	Non-delay n (%)		Delay n (%)		Total	Chi-square	p-value
Gender							
Male	25	(37.3)	42	(62.7)	67	0.470	0.493
Female	11	(30.6)	25	(69.4)	36		
Age							
Less than 20 years	1	(100)	0	(0)	1	5.923	0.296 [a]
21-30 years	4	(36.36)	7	(63.64)	11		
31-40 years	8	(42.11)	11	(57.89)	19		
41-50 years	4	(20.00)	16	(80.00)	20		
51-60 years	11	(45.83)	13	(54.17)	24		
>60 years	8	(28.57)	20	(71.43)	28		
Education							
No formal education	15	(30.0)	35	(70.0)	50	5.676	0.199 [a*]
Primary school	12	(35.29)	22	(64.71)	34		
High school	5	(38.46)	8	(61.34)	13		
Diploma	1	(33.33)	2	(66.67)	3		
College	3	(100)	0	(0)	3		
Paid employment							
Yes	20	(35.7)	36	(64.3)	56	0.031	0.859
No	16	(34.0)	31	(66.0)	47		
Financial status							
Saving	9	(37.5)	15	(62.5)	24	0.094	0.954
Suffice	23	(34.3)	44	(65.7)	67		
In debt	4	(33.3)	8	(66.7)	12		
Marital status							
Married	10	(41.7)	14	(58.3)	24	4.144	0.231[a]
Single	24	(38.1)	39	(61.9)	63		
Divorce	0	(0)	4	(100)	4		
Widowed	2	(35.0)	10	(65.0)	12		
HIV status							
Positive	2	(13.3)	13	(86.7)	15	3.609	0.057*
Negative	34	(38.6)	54	(61.4)	88		

* Significant at p-value < 0.2, [a] Fisher's exact test

Table 12 Relationship between the participants' nationality and ethnicity with delay TB patient.

Variable	Non-delay n (%)		Delay n (%)		Total	Chi-square	p-value
Nationality							
Thailand	18	(28.57)	45	(71.43)	63	3.514	0.182[a]*
Ethnicity	14	(42.42)	19	(57.58)	33		
Myanmar	4	(57.14)	3	(42.86)	7		
Total					103		

* Significant at p-value < 0.2, [a] Fisher's exact test

Table 13 Relationship between the transportation, distance, and duration to health services data with delay TB patient.

Variable	Non-delay n (%)		Delay n (%)		Total	Chi-square	p-value
Transport							
Bike	0	(0)	3	(100)	3	5.956	0.100[a]*
Motorcycle	17	(36.2)	30	(63.83)	47		
Car	11	(27.50)	29	(72.50)	40		
Bus	8	(61.54)	5	(38.46)	13		
Distance							
0-10 km	19	(33.33)	38	(66.67)	57	1.708	0.663[a]
11-20 km	10	(33.33)	20	(66.67)	30		
21-30 km	3	(33.33)	6	(42.86)	9		
Over 30 Km	4	(57.14)	3	(4.48)	7		
Duration to government hospital							
less 30 min	26	(30.59)	59	(69.41)	85	5.563	0.049[a]*
30 min - 1hr	6	(46.15)	7	(53.85)	13		
Over 1 hr.	4	(80.00)	1	(20.00)	5		

* Significant at p-value < 0.2, [a] Fisher's exact test

Table 14 Relationship between the onset symptoms with delay TB patient.

Variable	Non-delay		Delay		Total	**Chi-square**	**p-value**
	n	(%)	n	(%)			
1 onset symptom	8	38.1	13	69.1	21	0.115	0.735
>1 onset symptoms	28	34.1	54	65.9	82		

* Significant at p-value < 0.2

Table 15 Relationship between the knowledge, awareness and stigma data with delay TB patient.

Variable	**Non-delay n (%)**		**Delay n (%)**		**Total**	**Chi-square**	**p-value**
Knowledge							
Low	2	(31.8)	11	(68.2)	13	5.322	0.07*
Moderate	22	(33.3)	45	(66.7)	67		
Good	12	(40.7)	11	(59.3)	23		
Awareness							
Low	7	(31.82)	15	(68.18)	22	0.555	0.758
Moderate	18	(33.33)	36	(66.67)	54		
Good	11	(40.74)	16	(59.26)	27		
Stigma							
Low	20	(42.6)	27	(57.4)	97	2.197	0.138*
High	16	(28.6)	40	(71.4)	6		

* Significant at p-value < 0.2

Table 16 Relationship between the first health seeking treatment with onset of symptoms data with delay TB patient.

Variable	Non-delay		Delay		Total	Chi-square	**p-value**
	n	(%)	n	(%)			
Government hospital	16	34.8	30	65.2	46	0.001	0.974
Others	20	35.1	37	64.9	57		

* Significant at p-value < 0.2

4.2.2 Binary logistic regression model for association between influencing variables and delay in TB patient

The bivariate analysis was used to screen for variables those indicated the association with delay in TB patient by using p-value less than 0.2 as a selection of those variables to include in multivariate analysis with significant level at p-value<0.05. Table 17 shows the final model results for multivariate analysis performed with binary logistic regression between influencing variables included HIV status, education, nationality, transportation, duration to government hospital, knowledge and stigma.

The binary logistic regression between HIV status and delay in TB patient as shown in Table 17 found that TB patients with HIV negative were increased 6.806-fold odds of being delay in health seeking (AOR = 6.806, p-value = 0.032, 95% CI 1.174 – 39.462) compared to TB patients who reported with HIV positive.

For nationality and delay TB patient, the binary logistic regression shows that TB patients who Non-Thai nationality were increased 2.824-fold odds of being delay TB patient (OR = 2.824, p-value = 0.041, 95% CI 1.041 – 7.660) compared with TB patients who was Thai nationality (Table 17).

Moreover, the binary logistic regression analysis between duration to health facility and delay TB patients also shows in Table 17 TB patients who travelled to health facility at duration of 30 minute to 1 hour were increased 18.467-fold odds of being delay TB patient (OR = 18.467, p-value = 0.033, 95% CI 1.257 – 271.414) compared with TB patients who travelled to health facility at duration less than 30 minute (Table 17).

However, regarding the variables of negative HIV, non-Thai nationality, duration to health facility with 30 minute to 1 hour were possible to be risk factors (AOR>1) of being delay TB patient but the significant of statistical analysis were not achieved for those mentioned factors in this study.

Table 17 Final binary logistic regression model for the health seeking behavior with delay in TB patient

Variable	B	AOR	P-value	95% CI	
				Lower	Upper
HIV status					
Positive		Ref.			
Negative	1.918	6.806	0.032**	1.174	39.462
Education					
No formal school		Ref.			
Formal school	0.928	2.528	0.067	0.937	6.820
Nationality					
Thai		Ref.			
Non-Thai	1.038	2.824	0.041**	1.041	7.660
Transportation					
Car, Bus		Ref.			
Bike, Motorcycle	-0.387	0.679	0.467	0.239	1.926
Duration to government hospital					
less 30 min		Ref.			
30 min - 1hr	2.916	18.467	0.033**	1.257	271.414
Over 1 hr.	2.488	12.040	0.097	0.636	227.923
Knowledge					
Good		Ref.			
Moderate	1.552	4.721	0.110	0.704	31.664
Low	0.963	2.619	0.105	0.817	8.394
Stigma					
Low		Ref.			
High	-0.607	0.545	0.211	0.211	1.409

** Significant at p-value < 0.05; Ref: reference group; AOR: adjusted odds ratio (adjusted by education, nationality, transportation, duration, level of knowledge and stigma)

Chapter 5

Summary, Discussion and Recommendations

From this study, the title delay in health seeking behavior among TB patients in Chiang Rai Province, Thailand. The objectives of this research were as follows:

1. To find pattern of health seeking behavior (including the duration from onset of major symptoms to the time of seeking appropriate TB treatment) among TB patients in Chiang Rai province, Thailand.
2. To determine the association between socio-demographic characteristics with patient delay among TB patients in Chiang Rai province.
3. To determine the association between accesses to health facility with patient delay among TB patients in Chiang Rai province.
4. To determine the association between symptoms onset with d patient delay among TB patients in Chiang Rai province.
5. To determine the association between knowledge regarding patient delay among TB patients in Chiang Rai province.
6. To determine the association between awareness regarding patient delay among TB patients in Chiang Rai province.
7. To determine the association between stigma with patient delay among TB patients in Chiang Rai province.
8. To determine the association between pattern of health seeking behavior with patient delay among TB patients in Chiang Rai province.

The TB patients participated in this study included 103 patients age more than 18 years old, diagnosis with pulmonary TB and treated in the investigated border hospitals. Descriptive statistics were described in percentage and frequency for socio-demographic characteristic, access to health facility, symptoms onset, knowledge, awareness, stigma and pattern of health seeking behavior. The descriptive statistics were mean, standard deviation, maximum and minimum were used with level of knowledge, awareness and stigma score. The inferential statistics was used to find the

association between independent and dependent variable by chi-square and binary logistic regression for find the last model of relationship in variables.

5.1 Summary

From the collected data, the ratio of male and female was about 2 : 1. The majority of the participants were elderly with age more than 60 years old. The education level of most of the participants was no formal education. Suffice income and paid employment were mostly reported by the study's participants. Majority of the study's participants was also single. Most participants were Thai (61.2%) and 32% were ethnic minority. The ethnicity was reported in 5 groups included Akha, Thai Yai, Thai Lue, Mahong and others. Most participants were HIV negative. In this study, most patients spent less than 30 minutes (82.5%) to the hospital. The distance from home to hospital were mostly reported as 0 to 10 kilometers (55.3%), and participant used motorcycle (45.6%). Almost all of TB patients came to hospital with cough (76.7%), weakness (61.2%) and weight loss (57.3%). The top three of health seeking treatment which participant choose were government hospital (40.8%), self-medication (20.4%) and private clinic (16.5%) respectively. the fourth was pharmacy or drug shop (13.6%), The fifth was primary health care (6.8%) and the last was traditional medicine (1.9%).

For the scores of knowledge, awareness and stigma, the minimum and maximum of knowledge scores were 2 and 10 from 10 of total scores. The awareness scores were 2 and 5 from 5 of total scores. The stigma scores were 10 to 100 or minimum of 20 and maximum 100. The average score of knowledge, awareness and stigma was 7.38, 4.03 and 54.85 respectively. Corresponding standard division was 1.567, 4 and 58 on knowledge, awareness and stigma. Furthermore, the level of knowledge and awareness were divided to 3 group which poor, moderate and good. The majority of participant had moderate knowledge (65%) and moderate awareness (52.43 %). The stigma scores were divided to 2 groups: high stigma and low stigma. The most participants had high stigma (54.4%).

The association between independent variable which socio-demographic data, access to health facility, symptoms onset, knowledge, awareness, stigma and pattern

of health seeking behavior were use chi-square test as shown in table 10, 11 the patient delay was associated with education, HIV status and nationality (socio-demographic) with statistic significant (p-value < 0.2). Part of access to health facility of patient, the significant independent variables with patient delay were transportation and duration (p-value < 0.2). From past of knowledge, awareness and stigma, the significantly independent variable were knowledge and stigma (p-value < 0.2). For the study of relationship, this study was found that the factor relating to the relationship with delay patient of TB patient in term of statistic significant at p-value 0.05 by binary logistic regression were HIV status, nationality and duration.

In conclusion, the results show health seeking included characteristic, associated relationship and risk factor of TB patient. This study found the aim for find pattern of health seeking behavior among TB patient in boarder area. Alarmingly, some patients took as many as five action before visited a hospital.

5.2 Discussion

5.2.1 Socio-demographic characteristic

The study found that the most of age group was more than 60 years old (27.2%) which similar to the study in India (38). Interestingly, the patients aged between 41-50 years old were delay more than non-delay, which could be because the patients at this age were more focus on work than taking care of their health. The education was not a risk factor in this study; whereas the previous study in Ethiopia found that where educational status was the risk factor (39). Moreover, gender was also not a risk factor in this study while study from China found female gender was risk factor(40). In this study, HIV status was the risk factors associated with delay TB patient, which similar with previous study where HIV status was also found to be a risk factor of patient delay in TB patient which also consistent with the information from WHO HIV and TB (3, 4).Therefore, these results lead to the important in screening for TB infection and follow-up of the treatment in the HIV patients. In

Thailand, the health providers would screening TB and follow up in HIV positive patients (41).

The previous studies found that variables on socio-demographic which were age, educational level, occupation and having the previous history of TB treatment were also associated with visiting modern healthcare facilities and to delay in TB patient (21), which also supported by another study, where they found that the education status was the predictor of patient delay in TB patient. Different with study in Ethiopia found that the education status was the predictor of patient delay in and the second study found the educational status was significantly associated with patient delay. Interestingly with similarly age group but difference with marital status (42). Moreover, the research on recent year in 2014, supported the educational status of TB patients as risk patient delay in TB patient (39); whereas this study did not find that education level of TB patients as a risk factor. About the pattern was similarly with the previous study in the first sequence the participant choose government hospital was (34.9 %) in this study was 40.8% (43).

5.2.2 Access to health facility

In this study, most of the TB patients used less than 30 minutes to reach the hospital, and the majority of participant used motorcycle as a transportation to the hospital. In addition, this study found that the duration 30 minute to 1 hour to health facility were risk factors to delay in TB patient. The majority of patient choose easy way to visit to health facility with less distance and less of duration. Nonetheless, this study's result regarding the transportation was different with the previous study in 2013, where they found the factors that associated with patient delay regarding access to health facility as the longer walking distance to health facility(44). Whereas, in 2016, another study found that factors contributing to delay in seeking treatment in TB patient was not associated with the distance or transport cost to the nearest public health facility (19). Additionally, this study found similarity on variable of distance to health facility as risk factor with the previous study about knowledge and health seeking behavior of TB patients in Kerala, India found distance more than 5 km to

health facility was significant association with delay patient (38). The study different because in their study was different area and context.

5.2.3 Symptoms onset

The study found the most of delay patient visit to hospital by 2 or more symptoms. The majority symptom of TB patients was cough more than half. In regarding to the association between the symptoms onset and patient delay. This study found symptom onset TB was not associated with delay in TB patient. The interesting of this topic was more than half of participant (76.7%) visit government hospital by cough because cough related symptom with many diseases which fever, chronic obstructive pulmonary disease (COPD). The patient who has dry cough symptoms more than 2 weeks was a sign and symptoms of TB. The second symptom was weakness 63 (61.2%) can link to number of age groups. The majority of patient in this study was more than 60 years old so, weakness can cause by age and work. The third was weight loss. The patient who has weight loss 2 to 5 kg in 1 to 2 months that can cause by TB. So, when more symptoms onset has the patient have to screen and send to laboratory. Difference with the previous study in 2015 was observed that the protective factors associated with the delay were weight loss and sought treatment because of the first symptom (45). But a more recent Different with the study in Brazil. The protective factors associated with this delay were weight loss and have sought treatment because of the first symptom. Cough with other symptoms significant associated with patient delay of TB patient (38).

5.2.4 Knowledge awareness and stigma

Almost patients were good knowledge level but the participant more than half were not correct with question about hereditary and does not know about vaccine for TB (BCG). Interestingly, TB has 6 month for treat by regimens. So TB used long duration for treatment, the patient more than half think TB cannot curable. The awareness were not significantly associated with delay TB patient. The part of knowledge and stigma were significantly associated with delay TB patient. Similar with the study of care seeking behavior pattern of TB patient, where the knowledge was found to be significantly associated with delay (20). Moreover, another previous

study concerned the patient and health system delay among patients with TB found the TB knowledge was significant associated with increased patient delay in TB patient (46). But in 2016, another study found that the delay after the onset symptoms and the main factors responsible for this delay include having a poor perception of the quality of services offered in public health facilities, prior attendance at a private clinic and stigma associated with the disease (19). The population of two study has similarly by collecting in sub district and rural area but were different contexts.

5.2.5 Pattern of Health Seeking Behavior

The study was found 21 patterns of health seeking behavior. The first symptom onset with self-medication was the most number of pattern 12 patterns. The second was pharmacy or drug store 4 patterns. The third was private clinic with 3 patterns. Interestingly all of TB patient who choose to visit to primary health care, they visited to government hospital next action. The pattern of health seeking behavior of TB patient in this study which first action was government hospital 42 (40.8%) participants and others 61 (59.22%). The health facility was divided to 2 groups which health professional were “pharmacy or drug store, private clinic and primary health care” and non-health professional which traditional medicine and self-medication. From the previous study found 43.2% patients reported to the TB health facility on their own and others were referred by government hospitals (34.9 %) and general practitioners (21.9 %) (47). Same the study in the previous time found 96% patients had already reported to a healthcare provider or others to first, second or third health care providers (48). However, this study similar to the previous study found that the main reasons for delay, in men and women respectively, were late referral by doctor, long distance to health institution, prolonged use of self-medication, and financial constraints (49). Interestingly, the last action in this study of number fourth and fifth has 11 (10.68%) and 6 (5.8%). So the patient who has more action may be spread the TB to others people by droplet and secretion.

5.3 Recommendation

5.3.1 Recommendation on research outcome

This research was study about finds the pattern of delay health seeking behavior among TB patients in border hospitals. The outcome found risk factor of patient delay significantly associated were HIV status, Transportation and Distance. But, the majority of patient with pattern of health seeking behavior in the first sequence choose government. The most patient visit to hospital with other diseases and has onset symptoms of TB. Some patient has incidentally physical examination. About the knowledge, awareness and stigma, this study has limitation. The most of patients have consulted with doctor when they come to follow up by DOTS program. So, the patients have the knowledge and awareness of TB and they can have answered the question of TB in questionnaire. In the part of stigma, the most patient can live with TB without stigma and has supported by their families. The most patient was onset symptoms by unconsciously. The hospital has to improve the effective of scanning and screening for find the TB patient.

5.3.2 Recommendation for future research

Should there be no time constraints, the researcher can be collected the data for more participant. This study use only quantitative study so cannot explain the reason of TB patient about why the participant chooses that pattern of health seeking behavior. The ethnicity in this study was interesting topic for study in the future because the objective in this study does not focus on that topic. Currently has more the ethnic people with TB and lack of study in this topic.

Appendix A

Informed Consent Form

Date …… **Code number** ……

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

Title: Delay in Health Seeking Behavior among TB Patients in Chiang Rai Province, Thailand.

Principle researcher's name Mr. Yotsanon Sikkhajan

Contact address 32 Soi Inthamara 29, Lane 3, Samsen Nai, Phaya Thai, Bangkok 10400

Telephone 063-2439733 **Email** Yotsanon_sik13@lamduan.mfu.ac.th

I have read or been informed about the objective of the research, I clearly understand the explanation about the research by researcher.

I willingly agree to take part in this research and permit the researcher to ask the question involved in the structure questionnaire.

I have the right to withdraw from this research at any time as I wish with no need to give any reason. This withdrawal will not have any negative impact upon me.

The 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 Ethics Review Committee for Research Involving Human Research Subjects, Health Sciences Group, Chulalongkorn University (ECCU). Institute Building 2, 4 Floor, Soi Chulalongkorn 62, Phyat hai Rd., Bangkok 10330, Thailand, Tel: 0-2218-8147 Fax: 0-2218-8147 E-mail: eccu@chula.ac.th,

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

Sign ……	Sign ……	Sign ……..……
(……..……)	(……)	(……)
Researcher	Participant	Witness

Questionnaire

Survey objective: To explore TB-related knowledge, attitudes, stigma and health-seeking behavior among the TB patient.

TB register no: Date: ___ / ___ / ___

Location code: _____

Part 1 General and demographic questions

1. **Age (years):**
2. **What is your gender?**

   ○ 1. Male

   ○ 2. Female
3. **What is the highest level of education you have completed?**

   ○ 1. No school

   ○ 2. Primary school

   ○ 3. High school

   ○ 4. College

   ○ 5. Higher education (professional or post-graduate)
4. **Do you currently have paid employment?**

   ○ Yes

   ○ No
5. **What is your income**

   ○ Savings

   ○ Income = expenses

   ○ In debt

6. What is your marital status?

○ Married

○ Single

○ Divorced/separated

○ Widowed

7. Nationality:

○ Thailand

○ Myanmar

○ Ethnic group, tribe

If ethnic group, tribe

○ Akha

○ Lahu

○ Mahong

○ Other specifies_____

8. Getting to a hospital or health care facility

○ Walking

○ Bicycle

○ Motorcycle

○ Car

○ Bus

○ Other, specify _____

9. Chief symptoms onset of TB

○ Cough

○ Fever

○ Weight Loss

○ Night sweats

○ Hemoptysis

○ Chest pain

○ Body weakness

○ Others_____

10. How far do you live from the nearest health clinic or hospital? _____ Km.

11. Time to reach from home to the nearest public health facility? _____ Hr.

12. When are the chief symptoms of TB started? _____month_____Year

13. When your treatment in hospital do started? _____month_____Year

14. Delay patient

○ 1-30 Days (Non-delay)

○ >30 Days (Delay)

15. HIV status (Researcher marks from patient's medical record)

○ **Positive**

○ **Negative**

Part 2 Knowledge of TB.

Question	Right	Wrong
16. What kind of disease do you have?		
17. Is TB hereditary?		
18. Is TB contagious?		
19. Is TB curable?		
20. Do you think tuberculosis can be contacted by touch?		
21. Do you know if there is a vaccine for TB?		
22. Do you know the approximated duration of treatment?		
23. Do you know the kind of TB drugs?		
24. What is the color of your urine after used drug for treatment TB?		
25. Do you think the patient can screen TB from hospitals or health centers around the country?		

Part 3 Awareness of TB.

Question	Yes	No	Not known
26. Do you feel well informed about TB?			
27. Do you wish you could get more information about TB?			
28. Do you protect yourself and your family after getting TB?			
29. Do you take medicine according to the doctor's instructions?			
30. Do you focus on health after you have tuberculosis?			

Part 4 Stigma of TB.

Question	Strongly agree (5)	Agree (4)	Average (3)	Disagree (2)	Strongly disagree (1)
31. Do you feel ashamed for having TB?					
32. Do you have to hide TB diagnosis from the other people?					
33. Does TB affect relation with the others?					
34. Is TB very costly due to long duration of the disease?					
35. Do you prefer to live isolated since you got TB diagnosis?					
36. Does the TB affect your work performance?					
37. Does TB affect marital relation?					
38. Does TB affect family responsibilities?					
39. Do you think there is less chances of marriage due to TB diagnosis?					
40. Does TB affect your family relations?					

Part 5 Health seeking behavior with onset of symptoms (Before initial diagnosis)

Health seeking behavior	Yes	No
Pharmacy/Drug shop		
Self-medication		
Traditional medicine		
Private Clinics		
Others		

Part 6 Health facility of the health care provider whom you first sought consultation (Before initial diagnosis)

Order	Code of health facility
1st	
2nd	
3rd	
4th	
5th	

Code of Health Facility

Pharmacy/Drug shop	[1]
Traditional medicine	[2]
Private Clinics	[3]
Primary health care	[4]
Government hospital	[5]
Self-medication	[6]
Others (specify)	[7]

ข้อมูลสำหรับกลุ่มประชากรหรือผู้มีส่วนร่วมในการวิจัย

ชื่อโครงการวิจัย พฤติกรรมแสวงหาสุขภาพล่าช้าของผู้ป่วยวัณโรคในจังหวัดเชียงราย ประเทศไทย

ชื่อผู้วิจัย นายยศนนท์ สิกขาจารย์ ตำแหน่ง นิสิตมหาบัณฑิต

สถานที่ติดต่อผู้วิจัย (ที่ทำงาน) -

(ที่บ้าน) 26 หมู่ 2 ตำบลห้วยนาง อำเภอห้วยยอด จังหวัดตรัง 92130

โทรศัพท์ (ที่ทำงาน) - โทรศัพท์ที่บ้าน -

โทรศัพท์มือถือ 063-2439733 E-mail : Yotsanon.sik13@lamduan.mfu.ac.thขอเรียนเชิญท่านเข้าร่วมในการวิจัยก่อนที่ท่านจะตัดสินใจเข้าร่วมในการวิจัย มีความจำเป็นที่ท่านควรทำความเข้าใจว่างานวิจัยนี้ทำเพราะเหตุใด และเกี่ยวข้องกับอะไร กรุณาใช้เวลาในการอ่านข้อมูลต่อไปนี้อย่างละเอียดรอบคอบ และสอบถามข้อมูลเพิ่มเติมหรือข้อมูลที่ไม่ชัดเจนได้ตลอดเวลา

โครงการวิจัยนี้มีวัตถุประสงค์เพื่อหารูปแบบพฤติกรรมการแสวงหาสุขภาพรวมถึงระยะเวลาตั้งแต่เริ่มมีอาการสำคัญจนถึงเวลาที่ผู้ป่วยได้รับการวินิจฉัยว่าเป็นวัณโรคโรคในจังหวัดเชียงราย ประเทศไทย

รายละเอียดของกลุ่มประชากรหรือผู้มีส่วนร่วมในการวิจัย ลักษณะของกลุ่มประชากรเป็นผู้ป่วยที่ได้รับการวินิจฉัยว่าเป็นโรควัณโรคใน 4 โรงพยาบาลที่ได้รับการคัดเลือกมาดังนี้ โรงพยบาลเชียงแสน, โรงพยาบาลแม่สาย, โรพยาบาลเวียงแก่น และ โรงพยาบาลเชียงของ โดยโครงการวิจัยนี้คำนวนกลุ่มประชากรได้ทั้งหมด 110 คน เริ่มเก็บข้อมูลตั้งแต่ 1 พฤษภาคม พ.ศ. 2561 ไปจนถึง 30 มิถุนายน พ.ศ. 2561 โดยมีเกณฑ์ในการเข้า และ เกณฑ์การคัดออก ดังนี้

เกณฑ์การคัดเข้า

- ผู้ป่วยที่มีอายุตั้งแต่ 18ปีขึ้นไป
- เพศ ชาย และ หญิง
- ถูกวินิจฉัยว่าเป็นโรควัณโรคปอด
- รับการรักษาใน 4 โรงพยาบาลที่เลือกไว้ตามที่กล่าวไว้ข้างต้น
- อาศัยอยู่ในจังหวัดเชียงรายมากกว่า 6เดือน
- ยินดีที่จะเข้าร่วมและลงนามความยินยอมที่ได้รับแจ้ง
- มีล่ามช่วยแปลภาษาในกลุ่มชนเผ่าหรือกลุ่มชาติพันธุ์

เกณฑ์การคัดออก

- มีปัญหาในการสื่อสารเช่น หูหนวกและเป็นใบ้

หากท่านตกลงที่จะเข้าร่วมการศึกษาวิจัยนี้ คณะผู้วิจัยจะขอความร่วมมือให้ท่านตอบคำถามของการวิจัย ซึ่งจะใช้เวลาประมาณ 30 นาที โดยผู้วิจัยจะเป็นผู้ถามคำถาม โดยใช้แบบสอบถามพฤติกรรมแสวงหาสุขภาพผู้ป่วยวัณโรคที่ผ่านการตรวจสอบจากผู้เชี่ยวชาญ และได้รับการทดสอบก่อนนำมาใช้จริง

ผลของการศึกษานี้ อาจไม่เป็นประโยชน์กับท่านโดยตรง แต่จะเป็นประโยชน์ในการพัฒนาระบบบริการสุขภาพในการค้นหาผู้ป่วยวัณโรคทำให้สามารถได้รับการรักษาอย่างรวดเร็ว เพื่อเป็นการป้องกันความล่าช้าในการรักษาของผู้ป่วยวัณโรค และ ลดโอกาสเสี่ยงการแพร่กระจายของโรควัณโรค

การเข้าร่วมในการวิจัยของท่านเป็นโดยสมัครใจ และสามารถปฏิเสธที่จะเข้าร่วมหรือถอนตัวจากการวิจัยได้ทุกขณะ โดยไม่ต้องให้เหตุผลและไม่สูญเสียประโยชน์ที่พึงได้รับ โดยไม่กระทบต่อการดูแลรักษาหรือการรับบริการที่ท่านพึงได้รับต่อไป

ข้อมูลที่เกี่ยวข้องกับท่านจะเก็บเป็นความลับ หากมีการเสนอผลการวิจัยจะเสนอเป็นภาพรวม ข้อมูลใดที่สามารถระบุถึงตัวท่านได้จะไม่ปรากฏในรายงาน

โดยโครงการวิจัยครั้งนี้ได้มีค่าชดเชยการเสียเวลาให้แก่ผู้เข้าร่วม เป็นเงิน 100 บาท ต่อท่าน เพื่อเป็นค่าตอบแทนในการชดเชยเวลาที่ท่านเสียไปในการตอบคำถามในโครงการวิจัย

หากท่านไม่ได้รับการปฏิบัติตามข้อมูลดังกล่าวสามารถร้องเรียนได้ที่ คณะกรรมการพิจารณาจริยธรรมการวิจัยในคน กลุ่มสหสถาบัน ชุดที่ 1 จุฬาลงกรณ์มหาวิทยาลัย 254 อาคารจามจุรี 1 ชั้น 2 ถนนพญาไท เขตปทุมวัน กรุงเทพฯ 10330 โทรศัพท์/โทรสาร 0-2218-3202 E-mail: eccu@chula.ac.th”

.....	.....
(ดร.วันดี ศิริโชคชัชวาล)	(นายยศนนท์ สิกขาจารย์)
อาจารย์ที่ปรึกษาวิทยานิพนธ์	ผู้วิจัยหลัก
วันที่ ...../...../.....	วันที่ ...../...../.....

หนังสือแสดงความยินยอมเข้าร่วมการวิจัย

ทำที่.....

วันที่.....เดือน.....พ.ศ..... .

เลขที่ ประชากรตัวอย่างหรือผู้มีส่วนร่วมในการวิจัย.....

ข้าพเจ้า ซึ่งได้ลงนามท้ายหนังสือนี้ ขอแสดงความยินยอมเข้าร่วมโครงการวิจัย

ชื่อโครงการวิจัย พฤติกรรมแสวงหาสุขภาพล่าช้าของผู้ป่วยวัณโรคในจังหวัดเชียงราย ประเทศไทย

ชื่อผู้วิจัย นายยศนนท์ สิกขาจารย์

ที่อยู่ที่ติดต่อ 26 หมู่ 2 ตำบลห้วยนาง อำเภอห้วยยอด จังหวัดตรัง 92130 โทรศัพท์ 063-2439733

ข้าพเจ้า ได้รับทราบรายละเอียดเกี่ยวกับที่มาและวัตถุประสงค์ในการทำวิจัย รายละเอียดขั้นตอนต่างๆ ที่จะต้องปฏิบัติหรือได้รับการปฏิบัติ ความเสี่ยง/อันตราย และประโยชน์ซึ่งจะเกิดขึ้นจากการวิจัยเรื่องนี้ โดยได้อ่านรายละเอียดในเอกสารชี้แจงผู้เข้าร่วมการวิจัยโดยตลอด และได้รับคำอธิบายจากผู้วิจัย จนเข้าใจเป็นอย่างดีแล้ว

ข้าพเจ้าจึงสมัครใจเข้าร่วมในโครงการวิจัยนี้ ตามที่ระบุไว้ในเอกสารชี้แจงผู้เข้าร่วมการวิจัย โดยข้าพเจ้ายินยอมซึ่งจะใช้เวลาประมาณ 30 นาที โดยผู้วิจัยจะเป็นผู้ถามคำถาม โดยใช้แบบสอบถามพฤติกรรมแสวงหาสุขภาพผู้ป่วยวัณโรค ที่ผ่านการตรวจสอบจากผู้เชี่ยวชาญ และได้รับการทดสอบก่อนนำมาใช้จริง

ข้าพเจ้ามีสิทธิถอนตัวออกจากการวิจัยเมื่อใดก็ได้ตามความประสงค์ โดยไม่ต้องแจ้งเหตุผล ซึ่งการถอนตัวออกจากการวิจัยนั้น จะไม่มีผลกระทบในทางใดๆ ต่อข้าพเจ้าทั้งสิ้น และไม่สูญเสียประโยชน์ที่พึงได้รับ โดยไม่กระทบต่อการดูแลรักษาหรือการรับบริการที่ข้าพเจ้าพึงได้รับต่อไป

ข้าพเจ้าได้รับคำรับรองว่า ผู้วิจัยจะปฏิบัติต่อข้าพเจ้าตามข้อมูลที่ระบุไว้ในเอกสารชี้แจงผู้เข้าร่วมการวิจัย และข้อมูลใดๆ ที่เกี่ยวข้องกับข้าพเจ้า ผู้วิจัยจะเก็บรักษาเป็นความลับ โดยจะนำเสนอข้อมูลการวิจัยเป็นภาพรวมเท่านั้น ไม่มีข้อมูลใดในการรายงานที่จะนำไปสู่การระบุตัวข้าพเจ้า

หากข้าพเจ้าไม่ได้รับการปฏิบัติตรงตามที่ได้ระบุไว้ในเอกสารชี้แจงผู้เข้าร่วมการวิจัย ข้าพเจ้าสามารถร้องเรียนได้ที่คณะกรรมการพิจารณาจริยธรรมการวิจัยในคน กลุ่มสหสถาบัน ชุดที่ 1 จุฬาลงกรณ์มหาวิทยาลัย 254 อาคารจามจุรี 1 ชั้น 2 ถนนพญาไท เขตปทุมวัน กรุงเทพฯ 10330 โทรศัพท์/โทรสาร 0-2218-3202 **E-mail:** eccu@chula.ac.th

ข้าพเจ้าได้อ่านข้อความข้างต้นและมีความเข้าใจดีทุกประการแล้ว ยินดีเข้าร่วมในการวิจัยด้วยความเต็มใจจึงได้ลงนามในเอกสารแสดงความยินยอมนี้

ลงชื่อ

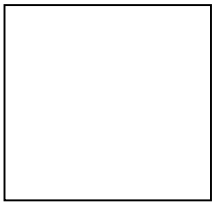
.....

.....)

(...

ผู้ให้ความยินยอม

ข้าพเจ้าไม่สามารถอ่านหนังสือได้ แต่ผู้วิจัยได้อ่านข้อความในแบบยินยอมนี้ให้แก่ข้าพเจ้าฟัง จนเข้าใจดี ข้าพเจ้าจึงประทับตราลายนิ้วมือขวาของข้าพเจ้าในแบบยินยอมนี้ด้วยความเต็มใจ



ลายมือชื่อผู้อธิบาย

.....

.....)

ข้าพเจ้าได้ลงลายมือชื่อไว้เป็นสำคัญต่อหน้าพยาน ทั้งนี้ข้าพเจ้าได้รับสำเนาเอกสารชี้แจงผู้เข้าร่วมการวิจัย และสำเนาหนังสือแสดงความยินยอมไว้แล้ว

ลงชื่อ..... ลงชื่อ.....

(ดร.วันดี ศิริโชคชัชวาล) (นายยศนนท์ สิกขาจารย์)

อาจารย์ที่ปรึกษาวิทยานิพนธ์ ผู้วิจัยหลัก

ลงชื่อ.....

(.....)

พยาน

Questionnaire Thai version

TB register no: Date: ___ / ___ / ___

Location code: _____

ส่วนที่ 1 แบบสอบถามข้อมูลส่วนบุคคลผู้ป่วย

คำชี้แจง กรุณาเติมข้อความลงในช่องว่าง และทำเครื่องหมาย √ลงในช่อง ( ) หน้าข้อความที่ตรงตามลักษณะที่เป็นจริงของท่านเพียงข้อเดียว

1. เพศ

( ) ชาย ( ) หญิง

2. อายุ_____ปี

3. ระดับการศึกษา

( ) ไม่ได้เรียนหนังสือ ( ) ประถมศึกษา

( ) มัธยมศึกษา ( ) อาชีวศึกษา/อนุปริญญา

( ) ปริญญาตรี ( ) สูงกว่าปริญญาตรี

4. ในปัจจุบันท่านมีการว่าจ้างงาน

( ) มี ( ) ไม่มี

5. ความเพียงพอของรายได้ปัจจุบัน

( ) เพียงพอและมีเหลือเก็บ

( ) เพียงพอแต่ไม่เหลือเก็บ

( ) ไม่เพียงพอและมีหนี้สิน

6. สถานภาพสมรส

( ) โสด

( ) คู่

( ) หย่า/แยกกันอยู่

( ) หม้าย

7. สัญชาติ

( ) ไทย ( ) พม่า

( ) กลุ่มชาติพันธ์หรือชนเผ่า

ถ้าเป็นกลุ่มชาติพันธ์หรือชนเผ่า

( ) อาข่า ( ) ละหุ่ ( ) ม้ง

( ) เย้า ( ) กระเหรี่ยง ( ) ปะหล่อง

( ) จีนฮ่อ ( ) ลั๊ว ( ) อื่นๆ โปรดระบุ_____

8. การเดินทางโดยส่วนใหญ่ไปยังโรงพยาบาลหรือสถานบริการ

( ) เดิน ( ) จักรยาน ( ) มอเตอร์ไซค์ ( ) รถยนต์

( ) รถประจำทาง ( ) อื่นๆ โปรดระบุ_____

9. อาการสำคัญเริ่มต้นของวัณโรค (สามารถตอบได้มากกว่า 1 ข้อ)

( ) ไอ ( ) มีไข้ ( ) น้ำหนักลด

( ) เหงื่อออกตอนกลางคืน ( ) ไอเป็นเลือด ( ) เจ็บหน้าอก

( ) ร่างกายอ่อนแรง ( ) อื่นๆ ระบุ_____

10. ระยะทางจากบ้านไปโรงพยาบาลหรือสถานบริการที่ใกล้ที่สุด_____กม.

11. เวลาส่วนใหญ่ที่ใช้เดินทางจากบ้านไปสถานบริการที่ใกล้ที่สุด_____ชม.

12. อาการของวัณโรคเริ่มต้นเมื่อไร _____เดือน_____ปี

13. เริ่มการรักษาครั้งแรกเมื่อไร _____เดือน_____ปี

14. ผู้ป่วยล่าช้า (นักวิจัยเป็นผู้ประเมิน)

( ) 1-30 วัน

( ) มากกว่า 30 วัน

15. สถานะโรคเอดส์ (นักวิจัยเป็นผู้ตอบโดยดูจากเวชระเบียนคนผู้ตอบแบบสอบถาม)

( ) ผลบวก ( ) ผลลบ

ส่วนที่ 2 ความรู้เกี่ยวกับโรควัณโรค

คำถาม	ถูกต้อง	ผิด
16.ท่านเป็นโรควัณโรค		
17.วัณโรคเป็นโรคที่ถ่ายทอดทางพันธุกรรม		
18.วัณโรคเป็นโรคติดต่อ		
19.วัณโรคสามารถติดต่อได้จากการสัมผัสตัวผู้ป่วย		
20.วัณโรคสามารถรักษาได้		
21.วัณโรคมีวัคซีนป้องกันได้		
22.ระยะเวลาในการรักษาวัณโรคใช้เวลาเท่าไร(6 เดือน)		
23.ยาที่ใช้รักษาวัณโรคมียาอะไรบ้าง (ไอโซไนอะซิด, ไรแฟมพิน, อีแทมบูทอล, ไพราซินาไมด์)		
24.หลังจากกินยาวัณโรคปัสวะของท่านเป็นสีนสีเป็นสีส้ม หรือสีแดง		
25.ท่านสามารถรับการตรวจวัณโรคได้จากโรงพยาบาล หรือ ศูนย์บริการสาธารณสุขทั่วประเทศที่อยู่ในหน่วยงานของรัฐ		

ส่วนที่ 3 ความตระหนักเกี่ยวกับโรควัณโรค

คำถาม	ใช่	ไม่	ไม่รู้
26.ท่านรู้สึกว่าได้รับข้อมูลวัณโรคเพียงพอหรือไม่			
27.ท่านต้องการข้อมูลเพิ่มเติมเกี่ยวกับวัณโรคหรือไม่			
28.ท่านป้องกันตัวเองและป้องกันสามาชิกในครอบครัวติดวัณโรค หลังจากทราบว่าท่านเองเป็นวัณโรคหรือไม่			
29.ท่านกินยาวัณโรคตามคำแนะนำของแพทย์หรือไม่			
30.ปัจจุบันท่านให้ความสำคัญกับการดูแลสุขภาพหรือไม่			

ส่วนที่ 4 การตีตราของผู้ป่วยวัณโรค

คำถาม	เห็นด้วยอย่างยิ่ง (5)	เห็นด้วย (4)	เฉยๆ (3)	ไม่เห็นด้วย (2)	ไม่เห็นด้วยอย่างยิ่ง (1)
31. ท่านรู้สึกอับอายที่เป็นวัณโรค					
32. ท่านต้องปกปิดการวินิจฉัยวัณโรคจากคนอื่น					
33. วัณโรคมีผลต่อการเข้าสังคมของท่าน					
34. วัณโรคมีค่าใช้จ่ายสูงมากเนื่องจากระยะเวลาในการรักษาที่ยาวนานของโรค					
35. ท่านชอบที่จะอยู่โดดเดี่ยวตั้งแต่หลังจากได้ทราบผลการตรวจวินิจฉัยวัณโรคจากแพทย์					
36. วัณโรคมีผลต่อประสิทธิภาพการทำงานของท่าน					
37. วัณโรคมีผลกระทบต่อความสัมพันธ์ในการสมรส					
38. วัณโรคทำให้ท่านรู้สึกต้องเป็นภาระของคนในครอบครัว					
39. ท่านคิดว่าการถูกวินิจฉัยว่าเป็นวัณโรคทำให้มีโอกาสแต่งานน้อยลง					
40. วัณโรคมีผลต่อความสัมพันธ์ในครอบครัวของท่าน					

ส่วนที่ 5 พฤติกรรมการแสวงหาสุขภาพเมื่อเริ่มมีอาการก่อนการวินิจฉัยครั้งแรก

พฤติกรรมการแสวงหาสุขภาพ	ใช่	ไม่ใช่
ร้านขายยา / เภสัชกร		
รักษาด้วยตนเอง		
ยาแผนโบราณ		
คลินิกเอกชน		
อื่นๆ		

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VITA

NAME	Yotsanon Sikkhajan
DATE OF BIRTH	26 September 1994
PLACE OF BIRTH	Trang Province, Thailand
INSTITUTIONS ATTENDED	Bachelor's degree in Public Health from Mae Fah Luang University 2016, Chiang Rai Province, Thailand.
HOME ADDRESS	26 No.2 Huai Nang sub-district Huai Yot district Trang 92130 Thailand