

ASSESSMENT OF KNOWLEDGE ATTITUDE AND PREVENTIVE BEHAVIOR OF
PULMONARY TUBERCULOSIS AMONG MYANMAR REFUGEES IN BAN MAI NAI SOI
TEMPORARY SHELTER MAE HONG SON THAILAND

Mr. Sittipong Sreechat

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บทคัดย่อและแฟ้มข้อมูลฉบับเต็มของวิทยานิพนธ์ตั้งแต่ปีการศึกษา 2554 ที่ให้บริการในคลังปัญญาจุฬาลงกรณ์ (CUIR)

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ที่อาศัยอยู่ในค่ายผู้อพยพ บ้านใหม่ในสอย จังหวัดแม่ฮ่องสอน ประเทศไทย

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วิทยานิพนธ์นี้เป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปริญญาวิทยาศาสตรมหาบัณฑิต

สาขาวิชาสาธารณสุขศาสตร์

วิทยาลัยวิทยาศาสตร์สาธารณสุข จุฬาลงกรณ์มหาวิทยาลัย

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By	Mr. Sittipong Sreechat
Field of Study	Public Health
Thesis Advisor	Assistant Professor Prathurng Hongsrnagon, Ph.D.

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

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

THESIS COMMITTEE

.....Chairman
(Assistant Professor Naowarat Kanchanakhan, Ph.D.)

.....Thesis Advisor
(Assistant Professor Prathurng Hongsrnagon, Ph.D.)

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

.....External Examiner
(Wongwat Liulak, M.D.)

สิทธิพงษ์ ศรีชาติ : การประเมินความรู้ เจตคติ และพฤติกรรมการป้องกันวัณโรคปอดในกลุ่มผู้อพยพชาวพม่าที่อาศัยอยู่ในค่ายผู้อพยพ บ้านใหม่ในสอย จังหวัดแม่ฮ่องสอน ประเทศไทย. (ASSESSMENT OF KNOWLEDGE ATTITUDE AND PREVENTIVE BEHAVIOR OF PULMONARY TUBERCULOSIS AMONG MYANMAR REFUGEES IN BAN MAI NAI SOI TEMPORARY SHELTER MAE HONG SON THAILAND) อ.ที่ปรึกษาวิทยานิพนธ์หลัก : ผศ.ดร.ประเทือง หงสรานากร, 95 หน้า.

การศึกษานี้มีวัตถุประสงค์หลักเพื่อประเมินความรู้ เจตคติ และพฤติกรรมการป้องกันวัณโรคปอด ในกลุ่มผู้อพยพชาวพม่าที่อาศัยอยู่ในค่ายผู้อพยพ บ้านใหม่ในสอย จังหวัดแม่ฮ่องสอน ประเทศไทย ซึ่งเป็นการศึกษาแบบภาคตัดขวาง โดยทำการเก็บข้อมูลในช่วงเดือน มีนาคม พ.ศ. 2556 ในค่ายผู้อพยพบ้านใหม่ในสอย ข้อมูลที่ได้จากการสัมภาษณ์แบบตัวต่อตัวโดยใช้แบบสอบถาม ได้ถูกนำมาวิเคราะห์ผ่านโปรแกรมสำเร็จรูปทางสถิติ SPSS (เวอร์ชัน 17) และใช้สถิติไคสแควร์ เพื่อวิเคราะห์ความสัมพันธ์ของตัวแปรซึ่งพิจารณาจากระดับนัยสำคัญทางสถิติที่ p -value น้อยกว่า 0.05 ระดับของความรู้จะถูกแบ่งออกเป็นสองกลุ่ม คือ ระดับต่ำและระดับสูง โดยใช้ ร้อยละ 70 ของคะแนนด้านความรู้เป็นเกณฑ์ ในขณะที่เดียวกันระดับของเจตคติและพฤติกรรมการป้องกันวัณโรคได้ถูกแบ่งออกเป็นสามระดับ โดยใช้พิสัยของคะแนนเป็นตัวชี้วัด ได้แก่ ระดับต่ำ ระดับกลาง และระดับสูงตามลำดับ ผู้เข้าร่วมการศึกษารั้งนี้มิเป็นเพศชาย และหญิงอายุ 18 ปีขึ้นไป รวมทั้งสิ้น 438 คน ผลการศึกษพบว่าผู้เข้าร่วมการศึกษามีคะแนนเฉลี่ยด้านความรู้เกี่ยวกับวัณโรคปอดเท่ากับ 17.7 ± 4.9 คะแนน (จาก 32 คะแนน) และ ร้อยละ 69.9 ของกลุ่มตัวอย่างมีความรู้อยู่ในระดับต่ำ ทั้งนี้ผู้เข้าร่วมการศึกษามีคะแนนเฉลี่ยด้านทัศนคติต่อวัณโรคปอดเท่ากับ 51.6 ± 8.1 คะแนน (จาก 69 คะแนน) และร้อยละ 47.9 มีเจตคติในระดับต่ำสูง ร้อยละ 40.4 อยู่ในระดับกลาง ร้อยละ 11.6 อยู่ในระดับต่ำ เมื่อพิจารณาพฤติกรรมการป้องกันวัณโรคปอดของกลุ่มตัวอย่างพบว่ามีความสัมพันธ์เท่ากับ 28.3 ± 5.3 (จาก 36 คะแนน) โดยร้อยละ 55.5 มีพฤติกรรมการป้องกันวัณโรคปอดอยู่ในระดับสูง ร้อยละ 32 อยู่ในระดับกลาง และร้อยละ 12.6 อยู่ในระดับต่ำ ผลการวิเคราะห์ความสัมพันธ์ของตัวแปรด้วยสถิติไคสแควร์พบว่า ระดับความรู้และระดับเจตคติมีความสัมพันธ์กันในเชิงลบอย่างมีนัยสำคัญ ($p < 0.001$) ระดับความรู้และระดับพฤติกรรมการป้องกันวัณโรคปอดมีความสัมพันธ์กันในเชิงลบอย่างมีนัยสำคัญ ($p < 0.001$) และพบว่ามีความสัมพันธ์ระหว่างระดับเจตคติและระดับพฤติกรรมการป้องกันวัณโรคปอดอย่างมีนัยสำคัญ ($p < 0.001$) เช่นกัน นอกจากนี้ ผู้วิจัยยังพบว่าพฤติกรรมการป้องกันวัณโรคปอดและการรับรู้ตามแบบแผนความเชื่อด้านสุขภาพ (Health Belief Model), การรับรู้โอกาสเสี่ยงของการเป็นโรค, การรับรู้ความรุนแรงของโรค, การรับรู้ถึงประโยชน์ของการรักษาและป้องกันโรค และการรับรู้ต่ออุปสรรคมีความสัมพันธ์กันในเชิงบวกอย่างมีนัยสำคัญ ($p < 0.001$)

จากช่องว่างของระดับความรู้ด้านวัณโรคปอดแสดงให้เห็นถึงความต้องการข้อมูลข่าวสาร องค์ความรู้ และการสื่อสารที่เกี่ยวกับวัณโรคปอดของกลุ่มตัวอย่าง โดยข้อค้นพบทั้งหมดจากงานวิจัยสามารถนำไปพัฒนา โปรแกรมการศึกษา และกลยุทธ์การสื่อสารเพื่อปรับเปลี่ยนพฤติกรรม ทั้งนี้เพื่อสร้างการตระหนักรู้และพฤติกรรมการป้องกันวัณโรคอย่างยั่งยืน

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SITTIPONG SREECHAT: ASSESSMENT OF KNOWLEDGE ATTITUDE AND PREVENTIVE BEHAVIOR OF PULMONARY TUBERCULOSIS AMONG MYANMAR REFUGEES IN BAN MAI NAI SOI TEMPORARY SHELTER MAE HONG SON THAILAND. ADVISOR : ASST. PROF. PRATHURNG HONGSRANAGON, Ph.D., 95 pp.

The aims of this study were to assess knowledge, attitude, and preventive behavior of pulmonary tuberculosis among Myanmar refugees. A cross-sectional study was conducted in March 2013 at Ban Mai Nai Soi temporary shelter, Mae Hong Son, Thailand. Data collected from structured questionnaire by face-to-face interview were analyzed using SPSS software (version 17). Chi-square test was used for analysis of variables relationship and considered statistically significant at p -value less than 0.05. Based on 70% cutoff point from total expected score, knowledge score was categorized into low level/need an improvement and high level of knowledge. Attitude and preventive behavior scores were categorized into low level, moderate level and high level base on the range of score. This survey involved 438 male and female Myanmar refugees age 18 years old and above in Ban Mai Nai Soi temporary shelter, Mae Hong Son province, Thailand. The study found out that mean of knowledge score was 17.7 ± 4.9 (out of 32) and 69.9% of the participants referred to low level of knowledge. Mean score of attitude was 51.6 ± 8.1 (out of 69) and 47.9% of respondents were categorized as a high level of attitude and 40.4% respondents were categorized as moderate level of attitude. It was found that 11.6% of respondents were accounted for low level of attitude on pulmonary tuberculosis. Regarding preventive behavior, it was found that mean score was 28.3 ± 5.3 (out of 36) and 55.5% had high level, 32.0% had moderate level and 12.6% had low level of preventive behavior respectively. The results upon Chi-square test revealed significant negative relationships between knowledge and attitude level ($p < 0.001$), knowledge level and preventive behavior level ($p < 0.001$). There was a positive relationship between attitude level and preventive behavior level ($p < 0.001$). Additionally, there were positive relationships of preventive behavior level and four aspects of perceptions which concerned perceived susceptibility, perceived seriousness, perceived benefit of prevention practice and perceived barrier, and preventive behavior level with statistically significant ($p < 0.001$).

This study highlighted the gap of knowledge among the respondents which it needs for IEC programs (information, education and communication) on pulmonary tuberculosis among this population. Therefore, all evidences from this study should be taken to develop educational programs together with BCC strategy (behavior change communication) to remove the gap and create sustainable awareness and behavior regarding pulmonary tuberculosis.

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

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LIST OF ABBREVIATIONS

AFB	acid-fast bacilli
CDC	Center of Diseases Control and Prevention
DDC	Department of Disease control
DPC	Disease Prevention and Control
HBC	high-burden country
IOM	International Organization for Migration
PTB	Pulmonary Tuberculosis
TBBC	Thailand Burma Border Consortium
UNHCR	United Nation's High Commissioner for Refugees
WHO	World Health Organization

CHAPTER I

INTRODUCTION

1.1 Background and Rationale

Tuberculosis (TB) is a bacterial infectious disease which it is caused by bacilli bacteria belonging to *Mycobacterium tuberculosis* complex (includes three subtypes namely *Mycobacterium bovis*, *Mycobacterium canettii* and *Mycobacterium africanum*). Being contagious and airborne, it basically affects lungs and introduces TB disease in lungs as pulmonary TB (Center for Disease Control and Prevention [CDC], 2005). Nonetheless, TB can also affect other sites such as lymphatic, blood vessels or any organ of the body (Carmin et al., 1994: online). These refer to Extra-Pulmonary TB.

TB is a curable disease, causing of morbidity and mortality among vulnerable people. It still remains a major health problem especially in refugee and migrant, because they are having low socio-economic status. Under such circumstances, it would lead them to the further malnutrition problem. The nutritional deprivation eventually increases the possibility of getting TB.

However, the chance of getting TB bacteria or *Tubercle bacilli* does increase when people share and confine their life with someone who has TB infection, in poor ventilation area and abbreviated sunlight exposure. This tragic situation is normally occurred when the living area is crowded in large number of population. In Thailand, refugee camps are the examples of such settings, which are 9 temporary shelters along Thai-Myanmar Border at the present time (Thailand Burma Border Consortium [TBBC], 2012).

Communicable Disease Department, WHO has declared that more than 85% of refugees originate from and subsist in high TB burden area. In addition, there was an estimated that over 50% of refugee population might be infected with TB (WHO, 2012). TB becomes an important health problem in many refugee settings.

The report of global tuberculosis care and control recently, it was conducted and prepared by World Health Organization. The global tuberculosis report 2012 has reveal epidemiology of tuberculosis worldwide of 2011 in order to follow up the

target of reducing in new tuberculosis case and mortality rate of tuberculosis death cases. The goal has been set to reduce the epidemic of tuberculosis by 2015.

However, number of new TB case has been falling (WHO, 2012).

In 2011, almost 9 million new diagnosed TB cases were reported. Additionally the reporting number of TB death case was 1.4 million worldwide (WHO, 2012). Although WHO has developed strategies to improve tuberculosis control, prevention and treatment such as DOTS strategy, method for diagnosing TB in coordination with National TB Control Programmes of many countries around the world, remaining of TB in some high burden countries and vulnerable people in particular are the major global health concern.

In South East Asia region, prevalence of TB cases is estimated to be 4.88 million. Although there was an annual incidence of TB cases with an estimate of 3.17 million cases in 2008 which represents almost one third of the global TB burden. Most people infected with TB were of 15 to 54 years of age. Male had more chance to be affected by TB twice as much than female.

Myanmar is listed as one of the Tuberculosis high burden countries in the region of South East Asia. According to an estimated epidemiological burden of TB in 2011, the rate per 100 000 populations was 506. Myanmar also ranked twelfth in the 22 high-burden countries that newly diagnosed TB cases approximately 80% arising in each year (WHO, 2012). The prevalence rate was slightly decrease compare to the prevalence rate in 2008 which it was 595 per 100 000 population (Thu et al., 2010). This tragic prevalence of TB was officially reported by the Global Tuberculosis Control, WHO.

The TB prevalence rate of Thailand has been falling gradually and very slowly. Global Tuberculosis Control, one of the latest assessment conducted information and suggested that the prevalence rates in 2011 was 110 per 100 000 population (WHO, 2012). Thailand had been given the Eighth of 22 high TB burden countries.

The situation of TB is still one of the major public health problem in Thailand. The proper treatment and care, case management, accessibility, prevention and control have been focusing prior to strengthen national TB programme in

Thailand. In 2006, the Bureau of Epidemiology, Department of Disease Control, Ministry of Public Health Thailand had reflected the epidemiological statistic on the Weekly Epidemiological Surveillance Report. TB verified patients were 30,961 persons, that accounted for 49.61 per 100 000 population. The mortality rate was also reported significantly; estimated rate of people who died with TB was 0.30 per 100 000 population, the exact number of 189 death cases were reported respectively (DDC, 2007).

Geographically, the report of Bureau of Epidemiology indicated that the rates of TB patient in all regions of Thailand were stagnating and still causing TB infection among Thai people every year. However, based on the TB situation report from 1999 –2006, the highest rate was in the Northern side with 60.30 per 100 000 populations. The Northeastern ranked as the second leading TB patient rate with an estimated 54.20 per 100 000 population, 42.90 in the Southern region did come after and the Central region of Thailand was 41.10 (DDC, 2007).

In regard with the previously report from Bureau of Epidemiology on TB infection rate of Thailand which the Northern region was the highest one. Additionally, the report on 2011 had described the latest TB situation in the Northern region. In respond to decreasing the TB burden of eight provinces in the Upper Northern side of Thailand (Mae Hong Son, Chiang Mai, Chiang Rai, Lumpoon, Lumpang, Payao, Prae and Nan), the 10th Disease Prevention Control (DPC), Chiang Mai province had reported 29,486 of overall TB cases (new diagnosed TB with smear positive/negative, Relapse, Failure, Treatment) that the number were cumulated from 2006 – 2011(DDC, 2011).

Moreover, the report of 10th DPC presented the absolute rates of prevalence rate and the mortality in 2011. These data were conducted to assess the achieving of TB control in eight provinces. Mae Hong Son, the one province with four vital refugee temporary shelters was reported that the mortality rate caused by TB was 8.54 per 100 000 population and the prevalence rate of TB equivalent to 81.84 per 100 000 population (DDC, 2011).

Table 1 Number of TB patients and PTB infection rate in 8 provinces (upper Northern Region) 2006 -2011

Year	Number of TB Patient	Rate of PTB patient per 100 000 population	Cumulative Number	Rate of PTB patient per 100 000 population (cumulative)
2006	4,449	78.37	4,449	77.36
2007	4,495	79.18	8,944	155.55
2008	4,493	79.15	13,437	233.69
2009	5,451	63.54	18,888	333.51
2010	5,403	66.24	24,291	428.31
2011	5,195	91.52	29,486	519.43

Source: Department of Disease Control, Thailand, 2011

Additionally, Mae Hong Son Province is one of the high TB burden areas in the northern part of Thailand (Warachet Teacharak, 2008; DDC, 2011). Mae Hong Son has variety of populations, the geographical features here are facilitating mobility of migrant and refugee from Myanmar. Therefore the high mobility and migration of Myanmar sub-tribes population who are living along Thailand-Myanmar border have created impact on communicable diseases.

Mueng District is the particular area with high incidence of Pulmonary Tuberculosis new cases every year. In 2008, the study had collected data from Tuberculosis clinic at Srisangwan general hospital, Mueng district, Mae Hong Son Province. The records of TB clinic in Srisangwan hospital was found that 829 TB patients were registered to receive health care service between 2001 and 2007, including Thai and non-Thai populations who are living in government-run temporary shelter, Ban Mai Nai Soi (Worachet Teacharak, 2008). Unfortunately, during the period of 2001-2007 there were 194 Myanmar refugees were diagnosed as TB patients out of 829 total TB cases in Srisangwan hospital (Worachet Teacharak, 2008). While the incidence rate of Pulmonary Tuberculosis is quite high among refugees in Ban Mai Nai Soi according to the report from Srisangwan hospital, the failure of treatment still reported significantly and the finding was strongly support lacking of knowledge on treatment among these PTB patients (Worachet Teacharak, 2008).

Table 2 Number of TB patients registering at TB clinic Srisanwan general hospital, Mueng Mae Hong Son, Thailand. (By living area of patients)

Year	Muang District		Myanmar (migrants)		Ban Mai Nai Soi (refugees)		Total
	Thai	Non-Thai	Thai	Non-Thai	Thai	Non-Thai	
2001	37	25	0	10	0	35	107
2002	58	26	0	5	0	27	116
2003	54	28	0	3	0	32	117
2004	75	31	0	4	0	20	130
2005	55	32	0	7	0	26	120
2006	57	35	0	6	0	25	123
2007	61	24	0	2	0	29	116
Total	397	201	0	37	0	194	829

Source: Worachet Techarak. Tuberculosis situation in Mueng district, Mae Hong Son province. *Journal of Health System Research* 2 (January-March 2008): 831-836.

Rationale of Study

The term “refugee” is a reminder and depressing reflection of the worst destruction done by mankind to mankind: wars, different political opinions, internal conflicts, discrimination and persecution on races, religion or nationality. Specific assistance and protection regarding to refugees’ right has been mandated by the United Nation’s High Commissioner for Refugees (UNHCR). In Southeast Asia region, Burma or Myanmar is one big example of unsolved internal conflicts that caused the unpleasant plight of internally displaced persons or refugees. Due to the ongoing political, socio-economic and cultural instability in Burma/Myanmar, there is little realistic possibility that Myanmar refugees in Thailand can go home sometime soon.

Over the past four decades, due to numerous violent clashes between ethnic minorities and with the Myanmar military Government, many Burmese refugees were internally displaced and had sought refuge in neighboring countries such as Malaysia, India and predominantly Thailand.

Burmese refugees in Thailand have been escaping Myanmar political conflict and crossing the jungles or river along the Eastern Myanmar border for the safety area of Thailand for nearly 25 long years. In the Kingdom of Thailand, they have

found refugees in nine government-run temporary shelters along the border where Myanmar refugees have been provided with basic nutrition, shelter, medical care and schooling. Being left with no other better alternatives, these refugees live in poor and congested shelters where personal healthcare or hygiene has been neglected or even compromised over life and survival. There is also low to very low level of knowledge on dangerous communicable diseases like TB among them, let alone the access to healthcare or proper medical treatment.

Nowadays, there are almost 90,000 Myanmar refugees who are carrying UNHCR-registered status and approximately 16,700 asylum seekers in Thailand. Most of the refugees are ethnic minorities from Myanmar, mainly Karen and Karenni, who live in nine refugee camps in four provinces along the Thai-Myanmar border. The Ministry of Interior under the Royal Thai Government manages all those camps, with most assistance provided by a variety of non-governmental organizations (NGOs), international organizations, non-profit organizations, humanitarian organizations and the United Nations High Commissioner for Refugees (UNHCR). (Website: UNHCR).

Depicted below is the recent demographic population of refugees in 9 temporary shelters along Thai – Myanmar border. Areas of the temporary shelters are also displayed on the map particularly Ban Mai Nai Soi in Mae Hong Son province which is the target area of this study.

The name and location of the temporary shelters are as follows.

- Chiang Mai: Wieng Heng temporary shelter
- Mae Hong Son: Ban Mai Nai Soi, Ban Mae Surin,
Mae Ra Ma Luang and Mae La Oon, temporary shelter
- Tak province: Mae la, Umpiem Mai, and Nu Poh temporary shelter
- Kanchanaburi: Ban Don Yang temporary shelter

The refugees are often forced to move from their original homeland to the unknown health environment and have to remain outside their country for a prolonged period of time. They can barely take a responsibility of their own health and welfare. Many Non-Governmental Organization (NGO) and Non-Governmental

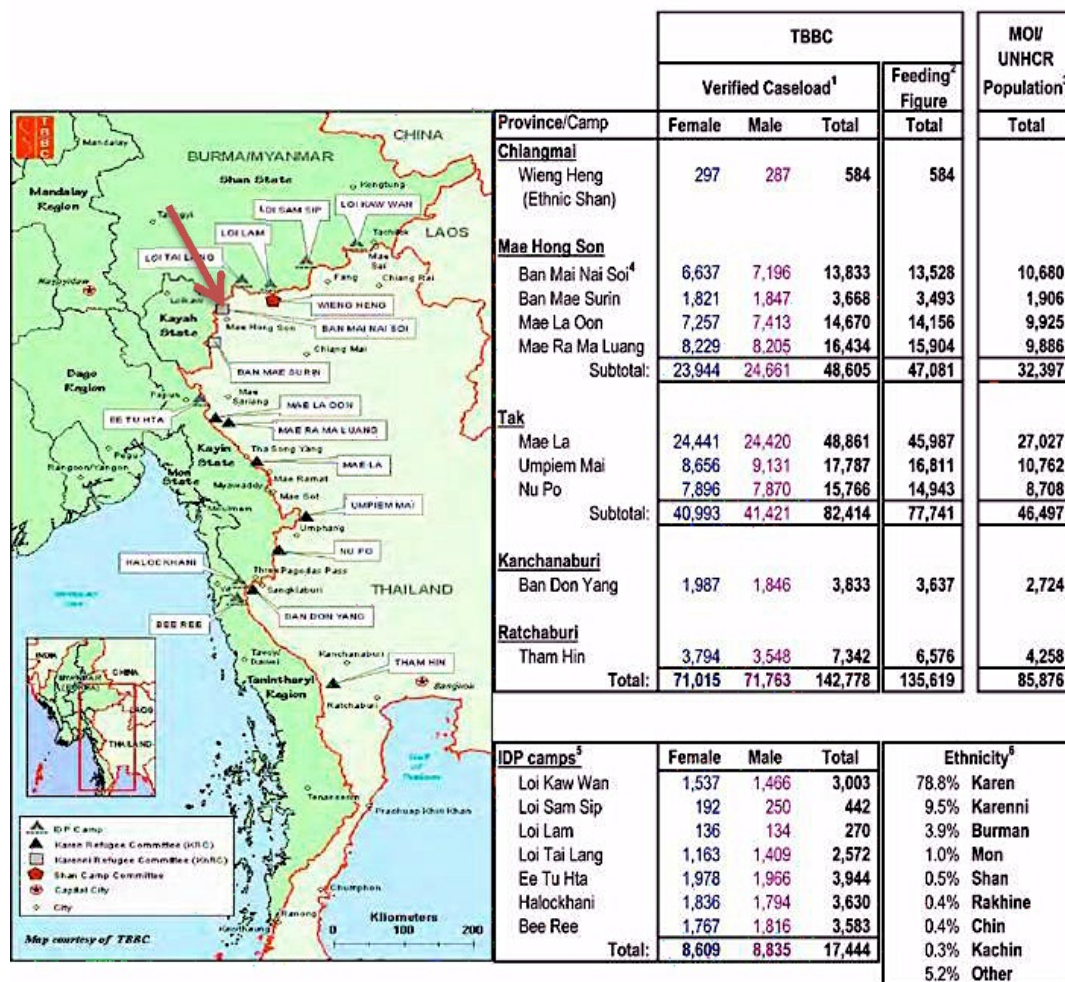
health agencies have altogether pushed effort on providing humanitarian and medical assistance as well as protection to refugees as their top priorities. They have designed, implemented and provided public health programs to the prevailing refugee communities in Thailand.

Those NGOs and health agencies include the American Rescue Committee (ARC), the International Rescue Committee (IRC), Médecins Sans Frontières (MSF), PATH, Care, Catholic Office for Emergency Relief and Refugees (COERR), Family Health International (FHI) and many more.

Nowadays, a total of 13,833 (TBBC, 2012) Myanmar refugees living in Ban Mai Nai Soi temporary shelter, Mae Hong Son province are facing with extreme poverty, severe health problems and desperate living conditions outside their mother land.

While Tuberculosis is one of the major communicable diseases that cause public health problems in that area, Burmese refugees settling in the community are not aware of behavioral risks to be exposed to Tuberculosis. The lack of such awareness is dangerous and has finally created the epidemiological burden of Tuberculosis along Thai-Burma borders. As with much communicable disease, TB control activities can be initiated even in confined and limited environment.

Figure 1 Burmese Border Displaced Person: Jun 2012



Notes:

- The Verified caseload includes all persons verified as living in the camps and eligible for rations, registered or not (including students). It excludes all previously verified residents now permanently out of camp.
- Rations are provided only to those personally attending distributions. The Feeding Figure is the actual number of beneficiaries recorded as having collected food rations this month.
- MOI/UNHCR figures are registered refugees. Most new arrivals since 2005 are not registered. UNHCR records an additional 248 people who have been submitted to the Provincial Admission Boards (PABs).
- Includes Kayan.
- Population figures for IDP camps are derived from camp committees on a monthly or quarterly basis depending on accessibility.
- From TBBC Population Database of verified caseload; IDP camps excluded.

Source: Thailand Burma Border Consortium Burmese, Programme Report, 2012

1.2 Research Questions

1. What are the characteristics of socio-demographic distribution among refugees in Ban Mai Nai Soi temporary shelters, Mae Hong Son Province, Thailand?
2. What are their Pulmonary Tuberculosis knowledge levels?
3. What are their levels of attitude towards Pulmonary Tuberculosis
4. What are their levels of Pulmonary Tuberculosis preventive behaviors?
5. What are the relationship among socio-demographic, pulmonary tuberculosis knowledge, and attitudes, with Pulmonary Tuberculosis preventive behaviors?

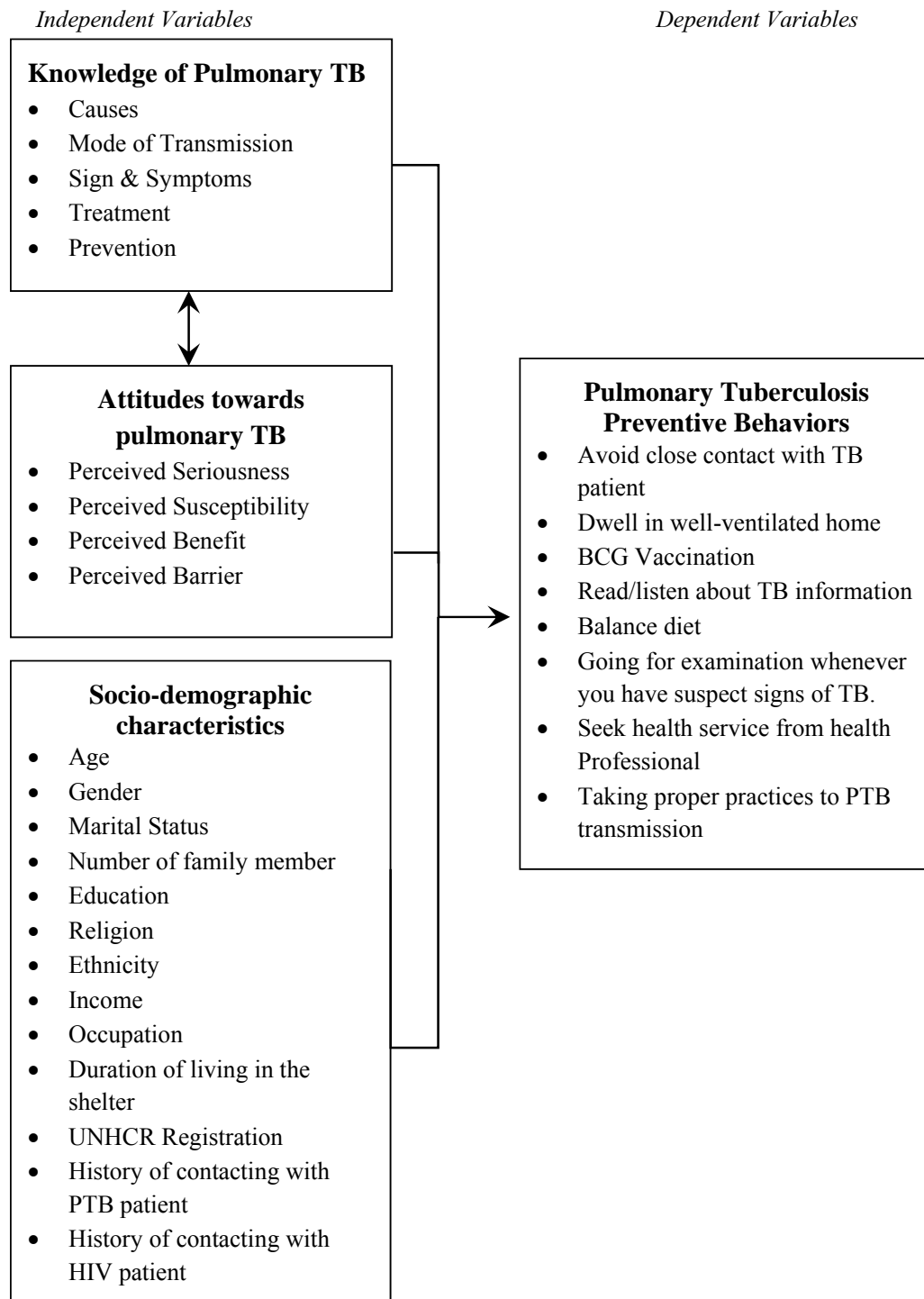
1.3 Research Objectives

1. To explicate the characteristic of socio-demographic distribution among refugee in Ban Mai Nai Soi temporary shelter, Mae Hong Son Province, Thailand.
2. To explore knowledge levels of Pulmonary Tuberculosis among refugee in Ban Mai Nai Soi temporary shelter, Mae Hong Son Province, Thailand.
3. To determine the levels of attitude towards Pulmonary Tuberculosis preventive behaviors among refugee in Ban Mai Nai Soi temporary shelter, Mae Hong Son Province, Thailand.
4. To explore the level of Pulmonary Tuberculosis preventive behaviors among refugee in Ban Mai Nai Soi temporary shelter, Mae Hong Son Province, Thailand.
5. To determine the relationship between socio-demographic, Pulmonary Tuberculosis knowledge, and attitudes, with Pulmonary Tuberculosis preventive behaviors among refugee in Ban Mai Nai Soi temporary shelter, Mae Hong Son Province, Thailand.

1.4 Research Hypothesis

1. There is a relationship between characteristics of socio-demographic distribution and knowledge levels of Pulmonary Tuberculosis among refugee in Ban Mai Nai Soi temporary shelter, Mae Hong Son Province, Thailand.
2. There are relationships between characteristics of socio-demographic distribution and Pulmonary Tuberculosis preventive behaviors among refugee in Ban Mai Nai Soi temporary shelter, Mae Hong Son Province, Thailand.
3. There is a relationship between knowledge levels of Pulmonary Tuberculosis and attitudes toward Pulmonary Tuberculosis among refugee in Ban Mai Nai Soi temporary shelter, Mae Hong Son Province, Thailand.
4. There is a relationship between attitude levels of Pulmonary Tuberculosis and preventive behaviors among refugee in Ban Mai Nai Soi temporary shelter, Mae Hong Son Province, Thailand.

1.5 Conceptual Framework



1.6 Operational Definitions

Tuberculosis (TB)

An infectious disease caused by bacteria *Mycobacterium Tuberculosis* (sometimes called *Tubercle bacilli*).

Pulmonary Tuberculosis (PTB)

One of the common Tuberculosis infections which usually infects lungs. The infection begins when the *Tubercle bacilli* spread into small air sacs in the lungs.

Knowledge of Tuberculosis

This refers to the understanding about Pulmonary Tuberculosis of the respondent through causative agent, sign and symptom, mode of transmission, prevention and treatment.

Perception of Pulmonary TB

Regarding to the Health Belief Model, this refers to the four main constructs of this model. The concept of the model is that individual behavior is determined by perceived seriousness, perceived susceptibility, perceived benefit and perceived barrier towards pulmonary TB.

Perceived seriousness (severity)

Refers to a personal or individual belief of respondent about the seriousness/severity of pulmonary TB infection.

Perceived susceptibility

Refers to a personal or individual belief of respondent about the personal risk of pulmonary TB infection.

Perceived benefit

Refers to a personal or individual belief of respondent about the value or usefulness of decreasing the risk of getting pulmonary TB infection.

Perceived barrier

Refers to a personal or individual belief of respondent about the evaluation of obstacles in their own ways of getting risk of pulmonary TB infection.

CHAPTER II LITERATURE REVIEW

This chapter enumerates reviews of many related studies on Tuberculosis that enable to explore what are discovered or done about the topic and ensure that studies done previously are not duplicated. Literature review was to be comprehended and aimed at contributing to existing studies done and information. This study applies the Health Belief Model as an important theory for this study to investigate the perception towards pulmonary Tuberculosis.

2.1 Tuberculosis (TB)

Global tuberculosis institute gives the definition of Tuberculosis (TB) as a bacterial infectious disease which it is caused by bacilli bacteria belonging to *Mycobacterium tuberculosis* complex (includes three subtypes; *Mycobacterium bovis*, *Mycobacterium canettii* and *Mycobacterium africanum*). It is contagious and airborne. It basically affects lung and introduces TB disease in lungs as pulmonary TB (Carmin et al., 1994: online; CDC, 2005). However, TB can also affect other sites such as lymphatic, blood vessels or any organ of the body. These refer to Extra-Pulmonary TB (CDC, 2005; WHO, 1998).

2.2 Pulmonary Tuberculosis

A center for Disease Control and Prevention explains that TB disease basically occurs or attacks the lungs. Specifically when a person inhales droplets from people who infected with TB coughs then the droplets containing tubercle bacilli are expelled to the air. The tubercle bacilli multiply in the air sacs of the lungs (CDC, 2005).

2.3 Tuberculosis situation

Globally, all of Pulmonary Tuberculosis situation in each country around the world were conducted in order to monitor and cope with the incidence entirely by Stop TB Program, World Health Organization. According to the Global Tuberculosis Report 2012: WHO, there were 8.7 million TB patients in 2011. Unfortunately 1.1 million are TB/HIV patients. New cases of TB patient in 2011 was only two-third of all 8.7 million TB patients, 5.8 million people were newly diagnosed in this year.

Furthermore, the worldwide TB mortality rate which was showing number of people deaths only by Tuberculosis since 1994, it was actually decreasing 41%.

From the surveillance and survey data, the TB Global Tuberculosis Report 2012 from WHO has been providing the most recent the epidemic of TB and information. TB is probably the top killer disease because in 2011, an estimated 500,000 of the women in the world were died with TB. Additionally this airborne contagious also killed 64,000 children worldwide in 2011.

The report also presented the global burden of disease caused by Tuberculosis. Geographically, Asia and Africa are the highest TB burden (WHO, 2012). The estimated of proportion in Asia was 59% and 26% in the Africa Region.

In 2011, prevalence of TB case was estimated to be almost 5 million cases in South East Asia. The prevalence of TB was actually presented from nationwide population based surveys. The surveys have been designed and implemented by national TB programme in coordination with WHO (WHO, 2012).

With reference to the list of 22 TB high burden countries, there were so many countries in South East Asia that had been listed such as Cambodia, Indonesia, Myanmar, Philippines, Thailand and Vietnam. Myanmar had been ranked as twelfth regarding all countries in the list with an estimated of 506 cases per 100 000 population in 2011. The rate per 100 000 population in 2011 was slightly decreased because there was an estimated 595 per 100 000 population in 2008 (Thu et al., 2010).

According to the TB high burden countries, Thailand had been given the Eighth of 22 high TB burden countries (WHO, 2012). Additionally the report of Global Tuberculosis Control 2012 revealed that the prevalence rate was 110 per 100 000 population in 2011 (WHO, 2012).

Despite the burden of disease caused by Tuberculosis has been the major of Thailand public health problem. Nation TB programme of Thailand has provided treatment strategy or DOTS and care, case management, accessibility, prevention and control as well as new diagnosis techniques in order to eliminate this tragic health problem.

2.4 Sign & Symptoms

Pulmonary TB has the most important clinical features such as cough for more than 3 weeks, sputum production and weight loss. A common symptom is cough and it occurs in more than 90% of patients. However, people who smoke or suffer acute upper and lower respiratory infections can also have bad cough that last 3 weeks or longer.

Symptoms of TB disease include (CDC, 2012: online)

- A bad cough that lasts 3 weeks or longer
- Pain in the chest
- Coughing up blood or sputum
- Weakness or fatigue
- Weight loss
- No appetite
- Chills
- Fever
- Sweating at night

2.5 Mode of Transmission

TB Bacteria or *Tubercle bacilli* will be generated from active pulmonary TB patient or person who is having pulmonary TB produces their droplets by coughing, sneeze, singing or speaking, because Tubercle bacilli are contained in droplet nuclei or airborne particles. The size of particle is estimated to be one to five micrometers. The particle is normally kept surviving containing *Tubercle bacilli* in the air for long period of time and then spread through room or building

M. tuberculosis will be infected in the lungs by inhaling the contained Tubercle droplets nuclei. Droplets pass through nasal passages, respiratory tract and move to bronchi before reach the alveoli of lungs. Since the bacilli organisms have reached the alveoli, it usually takes 2-10 weeks before spreading in the lungs after initial infection.

Nevertheless, some persons can live without any sign and symptom of TB for many years, but TB organisms still remains in their lungs because of the high level of immunes system. This condition is referred to latent TB infection. Although persons who is having latent TB infection do not consider TB infection because

they do not have symptoms of TB, but they usually have positive result to the Purified Protein Derivative (PPD)-tuberculin skin-test (Carmine et al., 1994: online).

2.6 Treatment of Tuberculosis

The goals of treatment of Tuberculosis are

1. To cure individual patient
2. To minimize the transmission of *M. tuberculosis* to other persons.

Thus the benefits of TB treatment are both individual and community which is the success of treatment (Thwin, 2008). WHO aims to improve and control TB situation, the program represent for an identifying and curing patients. This strategy is called Directly Observed Treatment Short Course (DOTS), a short course treatment for patient under the specific procedure (WHO, 2006).

Standard treatment regimens consist of 2 phases; 4 drugs during the initial phase and 2 drugs during continuation phase. These regimens are practically effective in patients with initially resistant organisms as in those with sensitive organism. There are 3 main properties of anti –TB drugs; bactericidal ability, sterilizing ability and ability to prevent resistance. Isoniazid and rifampicin are the most powerful bactericidal drugs (Maher, 1997). Pyrazinamide and streptomycin are also bactericidal and sterilizing against certain population of *Tubercle bacilli* (Govender, 1998).

2.7 Health Belief Model

Hochbaum, Rosenstock and Kegels, the group of social psychologists who did develop the health belief model. They served the Public Health Service of United States in 1950 and initiated the model to predict health behavior at that time. With regard to the very beginning of Health Belief model by the group of psychologists, they took all effort to explained wide spread failure when people participate prevention program even the disease detection program.

The Health Belief Model is a model utilizing behavior explanation and prediction. This model is to be more focused on individual belief or perception

about disease and strategic plan for decline that situation. Health Belief Model contains four main perceptions; perceived seriousness (severity), perceived susceptibility, perceived benefit and perceived barrier. These four main constructs can be used to explain health behavior (Rosenstock, 1990).

2.7.1 Perceived Seriousness (Severity) of TB

In 2009, Mtaita did clarify his result that perceiving the severity of a disease can prompt individuals to adopt preventive behavior and find out about the condition. The study found that of the respondents, 66.33% (n=65) viewed TB as a very serious disease while 20.41% (n=20) viewed it as “somewhat “(fairly) serious. So the perceived seriousness of TB could help the study to explain the sense of health problem, someone may consider it as a disease; need medical attention and some people concern the severity of PTB based on culture, family or personal background (Auer et al, 2000).

Ilongo, 2002 found a disproportionate number (96.5%) congruently perceived “Tuberculosis to be a serious disease because it may damage a lung in the long run if left untreated”. However, a much lower number and percentage (75.3%) considered “other diseases to be more serious than tuberculosis”. An over 80% grossly overestimated the severity of tuberculosis by stating that contracting tuberculosis will seriously prevent them from working (Ilongo, 2002).

The HBM emphasizes that perceived severity of TB infection refers to how seriously individuals view the consequences of TB infection both from a medical and social perspective. The study, then, reinforces the necessity of ongoing awareness campaigns in the media, especially over the radio, in schools, and community and public centres. The severity of the disease and its consequences need to be emphasized as well as the message that TB is both curable and preventable (Mtaita, 2009).

2.7.2 Perceived Susceptibility of TB

Perceived susceptibility means the respondent’s opinion of chance to get TB (Thwin, 2008). Study done in Tanzania defined that, regarding whether they were susceptible to TB, 37.04% (n=30) of the respondents said they could like anybody

else; 19.75% (n=16) were not sure whether they could, and several did not appear to think they could contract TB for various reasons, including exercise (16.05%; n=13), healthy diet and living conditions (14.81%; n=12), no close contact with TB-infected individuals (7.41%; n=6), and regular medical check ups (4.94%; n=4) (Mtaita, 2009).

In Kenya, The community's attitudes towards PTB were studied and found that Kenyan perceived PTB very contagious and very serious disease. They will avoid contact to TB patient and they should isolate from their family if they were diagnosed (Liefoghe et al., 1997).

2.7.3 Perceived Benefit of TB preventive behavior

Perceived benefit represent the respondent's belief in the fact that he/she practice the prevention would protect him or her from getting Tuberculosis (Thwin, 2008).The study done in Tanzania revealed that 81.63% (n=80) of the respondents said people could prevent getting TB through covering their mouth and nose when coughing or sneezing; 77.55% (n=76) indicated by avoiding shaking hands; 40.82% (n=40) indicated by praying, and 20.41% (n=20) did not know (Mtaita, 2009)

Perceived benefit also include whether respondent believed that chest X-rays could detect TB prior to the appearance of symptoms and whether they believed that early detection would improve the prognosis (Hochbaum, 1958).

2.7.4 Perceived Barrier of TB

Perceived barrier mention the respondent's opinion of tangible or enough confidence in his/her ability not to get Tuberculosis or preventive practice (Thwin, 2008).

A well-documented literature has shown why and how Tuberculosis has been highly stigmatized throughout history. Stigma of Tuberculosis as "a disease of the poor" persist, more recently, HIV/AIDS stigma affects Tuberculosis patients especially in high burden of HIV such as studies in Ethiopia, Pakistan and Thailand (Thwin, 2008).

Tuberculosis patients are highly stigmatized to the extent that patients may lose their work and marriage may breakdown if others get to know about the disease (Mezza, 2002).

2.8 Related Studies about Knowledge of Tuberculosis

An assessment of public awareness towards PTB was conducted in northern Ethiopia. The community based cross-sectional study demonstrated that there was a wide gap of Pulmonary TB among the respondents (Mesfin et al., 2005). Almost half of all respondents had misconception of PTB transmission and treatment. Additionally, the study did reveal that the level of PTB knowledge in women was lower than men (Mesfin et al., 2005).

The knowledge and traditional belief about Tuberculosis should be enhanced by educating people using variety of media and network of volunteer in the community (Areth, 2000). In addition, the difference in gender about PTB knowledge was one of the problems related educating people. Significantly higher TB knowledge level of men than women in rural area of China was found, (20.1% of men and 11.7% of women, $p < 0.001$) (Wang et al., 2008).

The study done in Phuket, Thailand about the preventive behavior of Tuberculosis among Myanmar migrant showed the strong association between knowledge of TB and their behavior. The statistic significant explored the relationship of knowledge levels of the respondents towards Tuberculosis and preventive behaviors ($p < 0.001$). Regarding that significant relation, having the good knowledge of Tuberculosis affected respondents' s practices because the study found that more than two third of them had good level of TB knowledge (Thwin, 2008). The cross-sectional study carried out in a rural area of China found that only 16% of all respondents understood that a coughing last longer than three weeks was an initial symptom of TB (Wang et al., 2008).

2.9 Pulmonary Tuberculosis Status in Myanmar Refugee

The cross-sectional survey in Tham Hin Temporary Shelter, Ratchaburi province, Thailand in 2009 which is one of nine refugee shelters in Thailand. The researcher discovered the tragic magnitude of prevalence of pulmonary TB along Thai-Myanmar border. The study covered 5,122 medical records of refugees who are living in Tham Hin temporary shelter and found that 264 out of 5,122, 5.15% are infected with TB and 263, 5.13% are infected with pulmonary TB during two years of research (Dilok Tongsukh, 2009).

Study done on number of TB patients in TB clinic at Srisangwan hospital showed that there were 829 TB patients who registered, diagnosed and received treatment from clinic between 2001 and 2007 (Worachet Techaruk, 2008). Furthermore, the researcher had found the variety of population that made high number of TB cases. Srisangwan hospital is located at Mueng District, Mae Hong Son province, Thailand which is the area of Thailand-Myanmar border. Therefore the patients are mainly Thai people, Myanmar migrants and Myanmar refugees who were living in the Government-run temporary shelter, Ban Mai Nai Soi. Worachet Techaruk (2008) conducted data from medical profiles of TB patients and he found 194 patients out of 829 TB patients were refugees from Ban Mai Nai Soi temporary shelter (Worachet Techaruk, 2008).

CHAPTER III RESEARCH METHODOLOGY

3.1 Site of the study

The temporary shelter for war fugitives at Ban Mai Nai Soi is located in the national reserved forest of Mae Pai covering 1,600 rai of land in Ban Mai Nai Soi, Mu 4, Tambon Pang Mu, and Mueang Mae Hong Son District. The topography around the shelter is mainly rugged mountains. The two areas of Ban Pang Khwai and Ban Pang Tractor together is referred to as Ban Mai Nai Soi which is approximately 40 kilometers from Mae Hong Son and it could be accessed by automobile and will take about one hour.

According to the population data (TBBC, 2012) the shelter had as many as 3,899 families that were considered those having fled the fighting and those who entered the pre-screening process. From a total of 13,833 uprising riot people, the breakdown was 6,637 male, 7,196 female.



3.2 Research Design

Cross sectional study design was used in this study to determine the Pulmonary Tuberculosis preventive behaviors as it related to characteristics of socio-demographic, knowledge levels of Pulmonary Tuberculosis and attitudes towards Pulmonary Tuberculosis among refugee in Ban Mai Nai Soi temporary shelter, Mae Hong Son Province, Thailand.

3.3 Study population

The population in this study will be Myanmar refugees in Ban Mai Nai Soi temporary shelter, Mae Hong Son Province, Thailand.

3.4 Sample Size

$$n = 1 + \frac{N}{1 + N(e^2)}$$

$$\begin{aligned} N &= \text{Population} &&= 13,833 \\ e^2 &= \text{Precision } (\pm 5\%) &&= (0.05)^2 \\ n &= \text{Sample} \\ &= 1 + \frac{13833}{13834 (0.05)^2} \\ n &= 400.97 \\ \text{Total Sample Size} &= 401 \end{aligned}$$

The number of respondent is 442 whereas 10% is added up to account for missing data or some respondent not giving the completed questionnaire.

3.5 Sampling technique

3.5.1 Sampling technique

Researcher applied this study to Chulalongkorn University Ethical Review Committee to review research procedure and to ensure that all respondents of this study and their personal information will be protected adequately. The confidentiality of respondent was particularly concern on this survey. The finalized questionnaire was later translated into Myanmar language after the study has been

obtained an approval from the Chulalongkorn University Ethical Review Committee.

The study samples were selected from the clusters/sections, which there were 20 sections in Ban Mai Nai Soi temporary shelter (TBBC, 2012). The study required 440 voluntary participants to response series of questions in the questionnaire, so 22 households from each section were accounted. Therefore the random sampling technique was applied and the households were randomized regarding the list of Household No. which the shelter committee does administer. Additionally, only a family member who meets with the inclusion criteria and willing to participate this study will be later given an interview process.

3.5.2 Inclusion criteria

Myanmar refugees living in Ban Mai Nai Soi who are 18 years and older, both male and female, who are willing to participate the interview.

3.5.3 Exclusion criteria

- Myanmar refugee who are blind and deaf.
- Myanmar refugee who is severely ill and unable to speak during the interview.
- People who know they have TB and are currently on treatment

3.6 Data collection tool

Structured questionnaire: The data were collected by structured questionnaires and the draft questionnaire was pre-tested prior to data collection for 20 sets with refugees who are living in Ban Don Yang temporary shelter, Karnchanaburi Province, Thailand. Ban Don Yang temporary shelter was selected for questionnaire pre-testing regarding the similar baseline as researcher's study site to avoid the contamination. The questions were designed to collect the following information.

- Socio-demographic characteristics: age, gender, marital status, number of family member, education, religion ethnicity, income, occupation, duration of living in the shelter, UNHCR registration status, history of contacting with PTB patient and history of contacting with HIV patient
- Knowledge of Pulmonary Tuberculosis; agent causes, mode of transmission, signs& symptoms and treatment & prevention
- Attitudes towards pulmonary Tuberculosis in terms of perceived susceptibility, perceived severity, perceived benefits, and perceived barriers
- Pulmonary Tuberculosis preventive behaviors; Avoid close contact with TB patient, dwell in well-ventilated home, BCG Vaccination, read/listen about TB information, balance diet, going for examination whenever you have suspect signs of TB. seek health service from health Professional, taking proper practices to PTB transmission.

3.7 Data collection

3.7.1 Questionnaire interview

This research required eight well trained research assistants who were local people and living in Ban Mai Nai Soi temporary shelter. Therefore researcher recruited eight research assistants from ethnic minorities in the shelter in order to facilitate all respondents. All research assistants were assigned to provide assistance to respondents in case of need and inform researcher accordingly.

Research assistants were provided training on questionnaire interviewing to determine the right way to collect data, meanwhile, researcher delivered basic knowledge of pulmonary tuberculosis to eight research assistants. It improves the understanding all items in research tool of the assistants. During the data collection in field, researcher supervised all assistant to ensure the completeness of data and generate support to respondent, if any.

Data were collected by face-to-face interviews of the target population by research assistants in coordination with researcher. The questionnaire was translated into Myanmar language in order to facilitate and support research assistants as well as respondents. Well-trained research assistant provided information of the study such as purpose on the study and objectives to eligible respondent before interview. Conducting information was started after when respondent agrees to take part and answer questionnaire. Eventually, a copy of correct information was provided to respondent after interview. However, the interview will be last between 15 to 30 minutes. After the interview is completed, the researcher will check on the completeness of the questionnaires.

3.8 Data analysis

The data analysis was performed in each part. Results of questionnaire were coded in a database and analyzed by using the Statistical Package for Social Sciences (SPSS version 17) window software (licensed for Chulalongkorn University). The descriptive statistics were used to describe the results for example frequency and percentage, the relationship between independent variables and dependent variables described by Pearson Chi-Square (χ^2) in order to explain the correlation regarding the hypothesis for categorical variables, depending on the normal distribution characteristic of data. Nonparametric test, Kruskal-Wallis test was used to determine whether there were any statistically significant differences between the variables (Kanlaya Vanichbuncha, 2010) depending on data distribution and if variables were continuous.

3.8.1 Measuring and scoring of scale

All of the items in the questionnaire will be scored regard to the criteria and detail in Table 2. Independent variables are described by part A, B and C of the questionnaire. Furthermore Part D is providing information regard to dependent variables.

Part A Socio-demographic Characteristics

This part consisted 13 general items.

Part B Knowledge of Pulmonary Tuberculosis

In this part, 32 points (14 items, 32 statements) was considered a possible for maximum score by all questions that are given correct answers.

Part C Attitudes on Pulmonary Tuberculosis

The range of possible score is one to three points from 22 items (23 statements). Total scores of respondent from all 23 statements were divided by 23 to generate level of attitude. Three points will be obtained for Agree, two points for Neutral and one point for Disagree respectively.

Part D Prevention practice on PTB

8 items (12 statements) in this part were used to describe prevention practices on PTB. Three points was given to Always answer, two for Sometimes and one point was only be scored for Never answer. So the possible range score of all items was one to three points (Total scores of respondent from all 12 statements divided by 12 to generate level of preventive behavior).

However, the overall score of the respondent in questionnaire Part B was categorized in two levels. High level means good with a score of equal or more than 70% of overall score in each part. Need improvement described the low level that score is less than 70%. Therefore Part C and D were described by 3 levels, high, moderate and low as following.

Knowledge of Pulmonary Tuberculosis

Range of possible score	0-32 points
High level of Knowledge/Good	$\geq 70\%$ (22-32)
Low level of Knowledge/Need improvement	$< 70\%$ (0-21)

Attitudes on Pulmonary Tuberculosis

Range of possible score	1-3 points
High level of attitude	2.34-3.00
Moderate level of attitude	1.67-2.33
Low level of attitude	1.00-1.66

Prevention practice on Pulmonary Tuberculosis

Range of possible score	1-3 points
High level of PTB preventive practice	2.34-3.00
Moderate level of PTB preventive practice	1.67-2.33
Low level of PTB preventive practice	1.00-1.66

Table 2 The Measurement Scale and Scoring of Independent Variables and Dependent Variables.

Variable	Description	Measurement Scale & Scoring
<i>Independent Variables</i>		
Socio-Demographic		
Age	Age of respondent at time of survey	Ratio
Gender	Gender of respondent	Nominal Male=1 Female=2 Prefer not to answer=3
Marital Status	Marital status of respondent at the time of survey	Nominal Single =1 Married=2 Divorced=3 Widow=4 Separated=5 Other=6
Number of family member	Number of member in respondent's family	Ratio
Religion	Religion of respondent	Nominal Buddhism=1 Christian=2 Hinduism=3 Other (specify)=4
Occupation	The recent job of respondent	Nominal Agriculture=1 Housewife=2 Day Laborer=3 Student=4 Other (specify)=5

Income	Respondent monthly income	Ratio
Duration of living in the shelter	The duration of time since respondent has moved to the shelter	Ratio (years/months)
Registration Status	The refugee registration status with UNHCR	Nominal Registered=1 Unregistered=2
History of contacting with PTB patient	Respondent's history of contacting person who have/had PTB patient	Nominal Do not know=1 Family member=2 Friend=3 Other=4
History of contacting with HIV patient	Respondent's history of contacting person who is infected with HIV/AIDS	Nominal Do not know=1 Family member=2 Friend=3 Other=4
Knowledge of PTB	Item of PTB causes, transmission, symptom, diagnosis and treatment will be scored regard to the correctness of respondent's answers	Ratio Correct Answer=1 point Incorrect Answer=0 point Don't know=0 point
Attitudes on PTB	Respondent has TB perception about susceptibility, seriousness, benefit of preventive behaviors and barriers.	Ratio Agree=3 points Neutral=2 point Disagree=1 point (Score was reversed for negative question)

Dependent Variable

Prevention practice	Respondent's preventive behaviors on PTB at the time of survey	Ratio Always=3 points Sometimes=2 points Never=1 point
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3.9 Reliability & Validity

The questionnaire was validated by consulting three experts and adjusted to ensure validity. After the validation, the questionnaire was tested for reliability by pilot test and re-adjusted again to ensure reliability.

The pilot test was performed on approximately 20 respondents. Henceforth, the Cronbach's Alpha was the measurement tool to evaluate the reliability of questionnaire part C (attitudes toward pulmonary tuberculosis). The overall raw alpha greater than 0.7 is acceptable. Cronbach's Alpha was 0.717, which indicate a high level of internal consistency with provides an overall reliability coefficient for a set of attitudes questions. The Kruder-Richardson-20(KR20) was separately applied on part B (knowledge of pulmonary tuberculosis). KR20 was run on a sample size of 20 respondents. it was 0.803 which is close to 1. However, part D (pulmonary tuberculosis preventive behaviors) was not be evaluated the reliability.

3.10 Ethical consideration

The study was submitted to and received an approval from the Ethical Committee of Chulalongkorn University prior to the interview. All the interviewees were explained about the research including purposes and questionnaires. Then, not only oral consent but also written consent were collected from each and every respondents. Their names were recorded for the confidentiality and the data were coded. The respondents can feel free to answer the questions and they may remain silent to the questions or quit the interview at any time. Privacy still maintained throughout the interview and will take place in private location or their home. All the data were kept with strictest confidentially for data analysis of this study only and the further health education or implementation for refugee. Additionally there was no foreseeable risk in respondent's day-to-day activities and none of this was allow possibility to trace back to the respondents.

3.11 Limitation of the study

This study will be the cross sectional study and so it will not include the changes among the refugee population overtime.

3.12 Benefit of the study

The findings of this study will provide the knowledge level of pulmonary Tuberculosis and the attitudes of Myanmar refugees. The overall findings of this study will be presented to health providers and researchers. The information will be supportive information for prevention and control programs and it might create a better understanding and support of service needs of people within Ban Mai Nai Soi temporary shelter. The finding of this study might also create a new understanding of ways in which pulmonary tuberculosis education and prevention.

3.13 Obstacles and Strategies to solve the problems

Most of the Myanmar refugees cannot speak nor understand Thai language and may feel inconvenienced to provide their information to the researchers.

To solve the problem, the questionnaire was translated into Myanmar language and local translators will be trained on the study details and questionnaire to conduct the interview.

For accuracy, the questionnaire which is being used in this study will be translated into Myanmar language and should be later translated from Myanmar language to English to ensure the consistency of all items in questionnair

CHAPTER IV RESEARCH RESULTS

According to the assessment of knowledge, attitudes and preventive behavior towards pulmonary tuberculosis among Myanmar refugees in Ban Mai Nai Soi temporary shelter, Mae Hong Son province, Thailand. A cross-sectional study was applied to this research. It involved 438 respondents who have been living in the shelter on March 2013. By using the structured questionnaire and face-to-face interview, all data and information were conducted.

The objectives of this study are to explicate the characteristic of socio-demographic distribution, knowledge levels of pulmonary tuberculosis, to determine the levels of attitude towards Pulmonary Tuberculosis and to explore the level of Pulmonary Tuberculosis preventive behaviors among those respondent. Additionally, the objectives are to determine the relationship between socio-demographic, Pulmonary Tuberculosis knowledge, and attitudes, with Pulmonary Tuberculosis preventive behaviors. This chapter describes the socio-demographic characteristic distribution of the respondents in detail as well as all variables of this study in regards to research objectives. The findings from data analysis in term of statistic are presented as following.

4.1 Socio-demographic characteristics distribution

In regard to the socio-demographic characteristic of the respondents which four hundred and thirty eight (n=438) consented to participate this study, descriptive statistic provided exact frequencies and percentages to all respondent's characters. Age was the character that being described firstly. The median of respondent's age is 34 years old. The respondent was between 18-90 of ages in this study. In Table 1, those who were 21-30 years old were the major group with 134 persons (30.6%). According to the Table 1, the majority of respondents was female with 257 persons (58.7%) while the rest 181 respondents were male (41.3%).

The marital status in Table 1 also presented the majority which 323 respondents were married (73.7%), 69 (15.8%) were single and 46 respondents were divorced, widow and separated, so this contributed to 10.5% respectively.

According to education, 243 (55%) or half of the respondents had no school, follow by 106(24.2%) high school, 64(14.6%) primary school, 10(2.3%) college, 3(0.7%) postgraduate/professional, 3(0.7%) religion school and 9(2.1%) were carrying other education.

The fairly frequency and percentage based upon difference of religion presented 165(37.6%) were Animist, 164(37.4%) were Christian, 108(24.7%) Buddhist and only 2(0.5%) were Hinduism.

Karenni was the majority of ethnicity of respondents, 411 Karenni was being considered 93.8% totally. Additionally, 246 (56.2%) have been registered their status by UNHCR (United Nation High Commissioner for Refugees) as refugee while 192 (43.8%) had been carrying unregistered status.

Among 438 of respondent there were 157 (35.8%) had no job during the period of interview, 134 (30.6%) were housewife, 88 (20.1%) were day labor/daily wages, 35 (8%) were doing agriculture and 24 (5.5%) were students. Based on the monthly income of the respondent, almost three hundred of them had income less than 500 THB per month which was 298 (68%), 96(21.9%) was having income range from 500-1,000 THB per month and 44 (10%) had monthly income greater than 1,000 THB.

It was found that 302 respondents (68.9%) had been living in Ban Mai Nai Soi temporary shelter longer than 10 years. There were 68 (15.5%) respondents who had 1 to 5 year of duration and another 68(15.5%) had 6 to 10 year of living in this shelter. Respondent with family members between 3 to 5 was 245 (55.9%), 6 to 10 family members was 116 (26.5%), 1 to 2 family members was 60 (13.7%), more than 10 was only 1(0.2%) and 16 (3.7%) of respondents had no family member.

Table 1 Socio-demographic characteristic distribution of respondents (n=438)

Characteristics	Frequency (n=438)	Percentage %
Age (years)		
18-20	59	13.5
21-30	134	30.6
31-40	110	25.1
41-50	67	15.3
51-60	41	9.4
>60	27	6.2
Median =34, Minimum = 18, Maximum =90		
Gender		
Male	181	41.3
Female	257	58.7
Marital Status		
Single	69	15.8
Married	323	73.7
Divorced	10	2.3
Widow	28	6.4
Separated	8	1.8
Education		
No school	243	55.5
Primary school	64	14.6
High school	106	24.2
College	10	2.3
Professional/Post graduate	3	0.7
Religion school	3	0.7
Other	9	2.1

Table 1 (Continued) Socio-demographic characteristic distribution of respondents

Characteristics	Frequency (n=438)	Percentage %
Religion		
Buddhism	108	24.7
Christian	164	37.4
Hinduism	2	0.5
Animist	165	37.6
Ethnicity		
Burmese	14	3.2
Dawei	2	0.5
Mon	2	0.5
Karenni	411	93.8
Karen	5	1.1
Shan	4	0.9
Registration Status		
Registered	246	56.2
Unregistered	192	43.8
Recent Job		
Agriculture	35	8
Housewife	134	30.6
Day labor	88	20.1
Student	24	5.5
Other (No job)	157	35.8
Monthly Income		
<500	298	68.0
500-1000	96	21.9
>1000	44	10.0

Table 1 (Continued) Socio-demographic characteristic distribution of respondents

Characteristics	Frequency (n=438)	Percentage %
Duration of Staying in Shelter		
1-5 years	68	15.5
6-10 years	68	15.5
>10 years	302	68.9
Number of Family Member		
No family member	16	3.7
1-2	60	13.7
3-5	245	55.9
6-10	116	26.5
>10	1	0.2

Table 2 History of pulmonary tuberculosis and HIV/AIDS patient exposure

Characteristics	Frequency (n=438)	Percentage %
Do you know people who have/had pulmonary tuberculosis?		
Do not know	380	86.8
Family member	6	1.4
Friend	26	5.9
Other person	26	5.9
Do you know people who have/had HIV/AIDS?		
Do not know	348	79.5
Family member	25	5.7
Friend	44	10
Other person	21	4.8

Table 2 presented history of respondents contacting or exposing to pulmonary tuberculosis and HIV/AIDS. Regarding pulmonary tuberculosis, almost 80% of respondents did not recognize pulmonary tuberculosis patient before. However, the rest were exposed to pulmonary tuberculosis patient through friend (10%), family member (5.7%) and other person (4.8%).

According to HIV/AIDS exposing, almost 90% of respondents did not recognize HIV/AIDS patient before. However, the rest had ever exposed to HIV/AIDS patient through friend (5.9%), other person (5.9%) and family member (1.4%).

4.2 Knowledge level of respondents

Table 3 Number and percentage of knowledge answers towards pulmonary tuberculosis questions

Knowledge of PTB	Correct answer	
	Frequency (n=438)	Percentage %
Causes, mode of transmission and prevention		
1. Pulmonary tuberculosis is an infectious disease caused by		
1.1 Bacteria/germ	299	68.3
1.2 Cold air	86	19.6
1.3 Shortage of food	143	41.8
1.4 Smoking, chewing, drinking alcohol	113	25.8
1.5 Hot climate	200	45.7
1.6 Hard work	176	40.2
2. Pulmonary tuberculosis can be transmitted by mosquito	208	47.5
3. TB can be transmitted from patient's respiratory system	306	69.9
4. A person can get PTB through: (use affirmative sentence, not question or refusal statement)		
4.1 Handshake	193	44.1
4.2 Air when a person with PTB coughs or sneezes	367	83.8
4.3 Sharing dishes	102	23.3
4.4 Touching items in public places	105	24.0
5. BCG vaccine can prevent children from PTB	305	69.6
6. HIV/AIDS patient has a risk of developing PTB	215	49.1

Table 3 (Continued) Number and percentage of knowledge answers towards pulmonary tuberculosis questions

Knowledge of PTB	Correct answer	
	Frequency (n=438)	Percentage %
Symptom, diagnosis and treatment		
7. Apart from lung, PTB can cause disease at		
7.1 Bone	251	57.3
7.2 Joints	168	38.4
7.3 Lymph node	217	49.5
7.4 Brain	215	49.1
8. The followings are signs and symptoms of PTB		
8.1 Rash	153	34.9
8.2 Cough that last longer than 3 weeks	356	81.3
8.3 Coughing up blood	375	85.6
8.4 Severe headache	154	35.2
8.5 Weight loss	335	76.5
8.6 Loss appetite	281	64.2
8.7 Fever and sweat at night	279	63.7
8.8 Chest pain	295	67.4
9. Diagnosis of PTB is done by sputum examination	368	84.0
10. Taking Chest X-rays is the important test in diagnosing PTB	352	80.4
11. PTB is cured by rest only (no need to take anti PTB drugs)	299	68.3
12. PTB is cured if anti PTB drugs are taken regularly and full course	363	82.9
13. Traditional medicine is cheaper and more effective than anti PTB drugs	258	58.9
14. Anti PTB drugs can cause discomfort and can give side effects	177	40.4

Information in Table 4 detailed the frequencies and percentages of respondents who responded to structured questions regarding pulmonary tuberculosis correctly in term of knowledge of the disease. The 14 questions consisted with 32 item were divided into 2 aspects, cause/mode of transmission and prevention and symptom/diagnosis and treatment. According to cause, mode of transmission and prevention, 299 (68.3%) respondents could answer that bacteria/germ is cause of pulmonary tuberculosis correctly, 143(41.8%) responded that shortage of food is not cause of pulmonary tuberculosis as well as 113(%) responded to smoking, chewing, drinking alcohol. However, there were only 86(19.6%) persons responded that cold air was not cause pulmonary tuberculosis. Meanwhile, there were 200(45.7%) and 176(40.2%) responded that hot climate and hardworking were not cause of pulmonary tuberculosis. 208 (%). 208 (47.5%) respondents refused that pulmonary tuberculosis can be transmitted by mosquito. 306(69.9%) responded that pulmonary tuberculosis can be transmitted by patient's respiratory system. It was found that 367 (83.8%) respondents knew that a person can get pulmonary tuberculosis through the air when a person with pulmonary tuberculosis coughs or sneezes, but less than half of them knew sharing dishes, handshaking and touching item in public place were the ways of getting pulmonary tuberculosis. BCG vaccine can prevent children from pulmonary tuberculosis was responded by 305(69.6%) respondents. HIV/AIDS patient has a risk of developing pulmonary tuberculosis was responded by 215(49.1%) respondents. Almost half of all respondents probably responded that apart from lung pulmonary tuberculosis can cause at bone (251, 57.3%), lymph node (217, 49.5%) and brain (215, 49.1%). However, joints was accounted for 168 (38.4%) of respondents.

Regarding sign and symptom of pulmonary tuberculosis, 356 (81.3%) gave the correct answer to cough that last longer than 3 weeks, cough up blood was 375(35.6%), weight loss was 335 (76.5%), loss appetite was 281(46.2%), fever and sweat at night 279(63.7%) and chest pain was 295 (67.4%) of all respondents. The study found that diagnosis of pulmonary tuberculosis was answered by 368 (68%) respondents. 352 (80.4%) gave the correct answered that taking chest X-ray is an important test in diagnosis pulmonary tuberculosis. 299 (68.3%) gave the correct

answered that pulmonary tuberculosis is not cured by rest only (no need to take anti pulmonary tuberculosis drugs). 363 (82.9%) responded to an item of pulmonary tuberculosis treatment which stated that it is cured if anti pulmonary tuberculosis drugs are taken regularly and full course. There were 258 (58.9%) provided right answer on statement says traditional medicine is cheaper and more effective than anti pulmonary tuberculosis drugs. The last question of knowledge, 177(40.4%) responded that anti pulmonary tuberculosis drugs can cause discomfort and can give side effect.

Table 4 Level of pulmonary tuberculosis knowledge

Level of knowledge	Scores	Number of	
		Respondents	Percentages (%)
Low level of knowledge/ Need an improvement	0-21	325	74.2
High level of knowledge/ Good	22-32	113	25.8
Mean = 17.7, SD = \pm 4.9 Minimum = 0, Maximum =28	0-32	438	100

Table 4 presented level of pulmonary tuberculosis knowledge among 438 respondents. Individual scores of each respondent was totally calculated and categorized based on 70% cutoff score out of the total expected score into 2 groups of respondent mainly. Both 2 groups allowed researcher to determine frequency and percentage of low level of knowledge/need an improvement and high of knowledge/good among all respondents.

Over all the total mean score was 17.7 \pm 4.9, minimum score was 0 and the maximum score was 28. It was obviously found that about one fourth of respondents were accounted for high level of knowledge/good which there was 113 (25.8%) respondents. In contrast, the rest 325 (74.2%) fail in low level of knowledge/need an improvement.

4.3 Attitude level of respondents

Table 5 Frequency and percentage distribution of respondents' attitudes towards pulmonary tuberculosis

Attitude on PTB	Frequency (%)		
	Agree	Neutral	Disagree
Susceptibility			
1. Pulmonary Tuberculosis mostly attacks			
1.1 Men	66(15.1)	122(27.9)	250(57.1)
1.2 Women	100(22.8)	143(32.6)	195(44.5)
2. Persons infected with HIV/AIDS is easily infected with PTB	253(57.8)	99(22.6)	86(19.6)
3. Person in close contact with PTB patient can get PTB	283(64.6)	93(21.2)	62(14.2)
4. Malnourished and poor people are at risk of PTB	76(17.4)	115(26.3)	247(56.4)
5. PTB can be transmitted if working together with PTB patient	230(52.5)	119(27.2)	89(20.3)
6. Patient with PTB should be regarded as outcast*	115(26.3)	128(29.2)	195(44.5)
Seriousness			
7. PTB is dangerous and can lead to death	335(76.5)	66(15.1)	37(8.4)
8. Delay in treatment can be fatal	297(67.8)	64(14.6)	77(17.6)
9. You can be dismissed from work if your employer knows that you have PTB	218(49.8)	113(25.8)	107(24.4)
10. You can be discriminated from friends if they know that you have PTB	211(48.2)	145(33.1)	82(18.7)
11. If I have PTB it will seriously disturb my family relation	265(60.5)	91(20.8)	82(18.7)
Benefit of preventive behaviors			
12. If you can stay in a well-ventilated house, you can prevent PTB	294(67.1)	83(18.9)	61(13.9)
13. You close your mouth and nose if someone who has PTB cough or sneeze besides you, you can prevent PTB	318(72.6)	60(13.7)	60(13.7)

Table 5 (Continued) Frequency and percentage distribution of respondents' attitudes towards pulmonary tuberculosis

Attitude on PTB	Frequency (%)		
	Agree	Neutral	Disagree
14. It is important to take PTB medication regularly if you have the disease	301(68.7)	100(22.8)	37(8.4)
15. Seeking immediate advice if you suspect that you have PTB symptom	264(60.3)	116(26.5)	58(13.2)
Barriers			
16. You are so poor to have good foods that have variety of nutrients though you want to have them	234(53.4)	165(37.7)	39(8.9)
17. You can't stay in a well-ventilated house to prevent PTB though you want to	231(52.7)	152(34.7)	55(12.6)
18. You can't escape from working together with PTB patients to prevent PTB	205(46.8)	107(24.4)	126(28.8)
19. You can't escape from staying in a crowded home to prevent PTB	196(44.7)	148(33.8)	94(21.5)
20. You can't seek health as soon as you are ill because you afraid of local authorities	151(34.5)	130(29.7)	157(35.8)
21. You can't seek health as soon as you are ill because of language barriers	144(32.9)	132(30.1)	162(37.0)
22. You are hesitant to go hospital/clinic for PTB examination because doctor may found something wrong with your lungs/body	201(45.9)	88(20.1)	149(34.0)

**Negative question, score will be reversed from original score*

Analyzing the distributions of respondents' attitudes towards pulmonary tuberculosis on Table 5 revealed frequencies and percentages based on four aspects of perceptions. As the given response from the respondents, there were Agree, Neutral and Disagree respectively.

According to perceived susceptibility towards pulmonary tuberculosis, almost half of respondent disagreed that the disease mostly attacks male (250, 57.1%) and female (195, 44.5%). Additionally, while 247 (56.4%) respondents

disagreed that malnourished and poor people are at risk of PTB, there were 195 (44.5%) who disagree that patient with PTB should be regarded as outcast. Since then, most of respondents agreed to these following statements; person infected with HIV/AIDS is easily infected with pulmonary tuberculosis (253, 57.8%), person in close contact with PTB patient can get pulmonary tuberculosis (283, 64.6%) and TB can be transmitted if working together with pulmonary tuberculosis patient (230, 54.5%).

Table 5 revealed that the majority group of respondent had positive attitude (perceived seriousness) towards pulmonary tuberculosis. There were 335 (76.5%) agreed that pulmonary tuberculosis is dangerous and can lead to death and 297 (67.8%) agreed that delay in treatment can be fatal. While 218(49.8%) agreed with this statement; you can be dismissed from work if your employer knows that you have pulmonary tuberculosis, 211 (48.2%) agreed with this statement; you can be discriminated from friends if they know that you have pulmonary tuberculosis and 265 (60.5%) agreed with this statement; if I have pulmonary tuberculosis it will seriously disturb my family relation.

The statistic showed that respondents mostly perceived the benefits of preventive behavior on pulmonary tuberculosis. Therefore the majority group agreed with the following statements, 294 (64.7%) agree that staying in a well-ventilated house, you can prevent pulmonary tuberculosis. 318 (72.6%) closing your mouth and nose if someone who has pulmonary tuberculosis cough or sneeze besides you, you can prevent pulmonary tuberculosis, 301 (68.7%) agreed that it is important to take pulmonary tuberculosis medication regularly if you have the disease. 264 (60.3%) agreed that seeking immediate advice if you suspect that you have pulmonary tuberculosis symptom.

In Table 5, Perceived barriers were determined to provide frequency of respondents' s attitudes. In a large proportion of respondent, they agreed with some of these statements which dramatically reflected their barriers as following, 234 (53.4%) agreed with statement says you are so poor to have good foods that have variety of nutrients though you want to have them, 231 (52.7%) agreed with statement says you can't stay in a well-ventilated house to prevent pulmonary

tuberculosis though you want to have them, 205 (46.8%) agreed with statement says you can't escape from working together with pulmonary tuberculosis patients to prevent pulmonary tuberculosis, 196 (44.7%) agreed with statement says you can't escape from staying in a crowded home to prevent pulmonary tuberculosis and there was an obvious attitude towards the statement that says you are hesitant to go hospital/clinic for pulmonary tuberculosis examination because doctor may found something wrong with your lungs/body which represented by 201 (45.9%) respondents.

Table 6 Level of perceptions towards pulmonary tuberculosis

Perception aspects of pulmonary tuberculosis	Level of Perception		
	Low level	Moderate level	High level
Perceived Susceptibility	70 (16.0%)	295 (67.4%)	73 (16.7%)
Perceived Seriousness	57 (13.0%)	92 (21.0%)	289 (66.0%)
Perceived Benefit of preventive behavior	25 (5.7%)	114 (26.0%)	299 (68.3%)
Perceived Barrier	73 (16.7%)	175 (40.0%)	190 (43.4%)

Table 6 describes the perception of respondents towards pulmonary tuberculosis regarding the health belief model. According to perceived susceptibility of pulmonary tuberculosis, more than half of all respondents (67.4%) were categorized as a moderate level. The majority of respondent perceived the seriousness of pulmonary tuberculosis, 289 (66.0%) were categorized as high level of perception. The current table also presents that 299 (68.3%) respondents had high level of perception regarding benefit of preventive behavior of pulmonary tuberculosis. In addition, in view of perceived barrier of pulmonary tuberculosis prevention, 175 (40.0%) were at moderate level and 190 (43.4%) were at high level respectively. This implies that more than 80% of respondents reflected and perceived barriers of pulmonary tuberculosis prevention at the time of survey.

Table 7 Level of attitude on pulmonary tuberculosis

Level of Attitude	Scores	Number of	
		Respondents	Percentages (%)
Low level of attitude	1.00-1.66	51	11.6
Moderate level of attitude	1.67-2.33	177	40.4
High level of attitude	2.34-3.00	210	47.9
Total	1.00-3.00	438	100%

Table 7 presented level of pulmonary tuberculosis attitudes among 438 respondents. Individual scores of each respondent was totally calculated where the maximum expected score comes from 32 items, 3 points was given to Agree, 2 points was given to Neutral and 1 point for disagree. Raw scores were eventually categorized which total score was divided by 32 items based on range from 1 to 3 points into 3 groups of respondent mainly. Those 3 groups allowed researcher to determine frequency and percentage of low level of attitude, moderate level of attitude and high of attitude among all respondents.

Over all, the majority group were 210 (47.9%) who were categorized as a high level of attitude and 177 (40.4%) respondents were categorized as moderate level of attitude. It was obviously found that 51 (11.6%) of respondents were accounted for low level of attitude on pulmonary tuberculosis.

4.4 Preventive behavior of respondents

Table 8 Frequency and percentage distribution of respondents' preventive behaviors towards pulmonary tuberculosis

Preventive behavior on pulmonary tuberculosis infection	Frequency (n=438)	Percentage %
1. You eat good foods that have variety of nutrients to prevent PTB (E.g. Vegetable, meat, fish equally)		
Always	203	46.3
Sometime	167	38.1
Never	68	15.5
2. You encourage getting BCG vaccination when you see the child less than one year old		
Always	261	59.6
Sometime	107	24.4
Never	70	16.0
3. You seek health service from health professional		
Always	226	51.6
Sometime	143	32.6
Never	60	15.8
4. Going for examination whenever you have suspect signs of PTB		
Always	246	56.2
Sometime	132	30.1
Never	60	15.8
5. You keep your house to get good ventilation and sunlight.		
Always	269	61.4
Sometime	145	33.1
Never	24	5.5
6. You avoid too close to PTB patients		
Always	193	44.1
Sometime	172	39.3
Never	73	16.7

Table 8 (Continued) Frequency and percentage distribution of respondents' preventive behaviors towards pulmonary tuberculosis

Preventive behavior on pulmonary tuberculosis infection	Frequency (n=438)	Percentage %
7. You read or heard health news about PTB, HIV/AIDS		
Always	156	35.6
Sometime	195	44.5
Never	87	19.9
8. You should be taken this practice to prevent PTB transmission		
8.1 Avoid sharing cup with PTB patient		
Always	256	58.4
Sometime	125	28.5
Never	57	13.0
8.2 Do not cough/sneeze at other people		
Always	229	52.3
Sometime	125	28.5
Never	59	13.5
8.3 Do not spit everywhere		
Always	221	50.5
Sometime	154	35.2
Never	63	14.4
8.4 Use separate room for PTB patient		
Always	230	52.5
Sometime	116	26.5
Never	92	21.0
8.5 Find early treatment		
Always	254	58.0
Sometime	83	18.9
Never	101	23.1

In the Table 8 above, its details presented the distribution of preventive practice of 438 respondents. Regarding this, the contents of this part contained 12 items prior to explore the statistical information in term of frequency and percentage of each item. About half of respondents responded during the face-to-face interview that they always take the following preventive practices, 203 (46.3%) responded that they always eat good foods that have variety of nutrients to prevent PTB (E.g. Vegetable, meat, fish equally), 261 (59.6%) responded that they

always encourage getting BCG vaccination when they see the child less than one year old, 226 (51.6%) responded that they always seek health service from health professional, 246 (56.2%) always go for examination whenever they have suspect signs of pulmonary tuberculosis, 269 (61.4%) responded that they always keep their house to get good ventilation and sunlight. There were 193 (44.1%) who always avoid too close to pulmonary tuberculosis patients, while 195 (44.5%) responded that they sometimes read or heard health news about pulmonary tuberculosis and HIV/AIDS. For the practices to prevent pulmonary tuberculosis transmission, almost half of respondents always take the following preventive practices. 256 (58.4%) always avoid sharing cup with pulmonary tuberculosis patient, 229 (52.3%) always do not cough/sneeze at other people, 221 (50.5%) always do not spit everywhere, 230 (52.5%) always use separate room for pulmonary tuberculosis patient and 258 (58.0%) always find early treatment.

Table 9 Level of preventive behavior on pulmonary tuberculosis

Level of preventive behavior	Scores	Number of	
		Respondents	Percentages (%)
Low level of preventive behavior	1.00-1.66	55	12.6
Moderate level of preventive behavior	1.67-2.33	140	32.0
High level of preventive behavior	2.34-3.00	243	55.5
Total	1.00-3.00	438	100%

Table 9 presented level of pulmonary tuberculosis preventive behavior among 438 respondents. Individual preventive practice scores of each respondent was totally calculated where the maximum expected score comes from 12 items, 3 points was given to Always, 2 points was given to Sometimes and 1 point for Never. Raw scores were finally categorized based on range from 1 to 3 points into 3 groups of respondent mainly which total score was divided by 12 items. Those 3

groups allowed researcher to determine frequency and percentage of low level of preventive behavior, moderate level of preventive behavior and high of preventive behavior among all respondents.

Over all, the majority group were 243 (55.5%) who were categorized as a high level of preventive behavior and 140 (32.0%) respondents were categorized as moderate level of preventive behavior. It was obviously found that 55 (12.6%) of respondents were accounted for low level of preventive behavior on pulmonary tuberculosis.

4.5 Relationship between variables

Table 10 The relationship between socio-demographic characters and knowledge level of pulmonary tuberculosis

Socio-demographic characters	Level of knowledge		p-value
	Low level	High level	
Age (years)			.205
18-20	48 (14.8%)	11 (9.7%)	
21-30	98 (30.2%)	36 (31.9%)	
31-40	81 (24.9%)	29(25.7%)	
41-50	43 (13.2%)	24 (21.2%)	
51-60	32 (9.8%)	9 (8.0%)	
>60	23 (7.1%)	4 (3.5%)	
Gender			.946
Male	134 (41.2%)	47 (46.7%)	
Female	191 (58.8%)	66 (58.4%)	

Table 10 (Continued) The relationship between socio-demographic characters and knowledge level of pulmonary tuberculosis

Socio-demographic characters	Level of knowledge		p-value
	Low level	High level	
Marital Status			.439
Single	56 (17.2%)	13 (11.5%)	
Married	226 (69.5%)	97 (85.8%)	
Divorced	10 (3.1%)	0 (0.0%)	
Widow	25 (7.7%)	3 (2.7%)	
Separated	8 (2.5%)	0 (0.0%)	
Education			.324
No school	183 (56.3%)	60 (53.1%)	
Primary school	44 (13.5%)	20 (17.7%)	
High school	80 (24.6%)	26 (23.0%)	
College	6 (1.8%)	4 (3.5%)	
Professional/Post graduate	1 (0.3%)	2 (1.8%)	
Religion school	3 (0.9%)	0 (0.0%)	
Other	8 (2.5%)	1 (0.9%)	
Religion			.211
Buddhism	74 (80.1%)	34 (30.1%)	
Christian	116 (35.7%)	43 (38.1%)	
Hinduism	1 (0.3%)	1 (0.9%)	
Animist	134 (41.2%)	35 (31.0%)	
Ethnicity			.660
Burmese	12 (3.7%)	2 (1.8%)	
Dawei	2 (0.6%)	0 (0.0%)	
Mon	1 (0.3%)	1 (0.9%)	
Karenni	303 (94.1%)	108 (96.4%)	
Karen	4 (1.2%)	1 (0.9%)	

Table 10 (Continued) The relationship between socio-demographic characters and knowledge level of pulmonary tuberculosis

Socio-demographic characters	Level of knowledge		p-value
	Low level	High level	
Registration Status			$X^2=14.77$, $p<.001$
Registered	200 (81.3%)	46 (18.7%)	
Unregistered	125 (65.1%)	67 (34.9%)	
Recent Job			.133
Agriculture	29 (8.9%)	6 (5.3%)	
Housewife	106 (32.6%)	28 (24.8%)	
Day labor	61 (18.8%)	27 (23.9%)	
Student	20 (6.2%)	4 (3.5%)	
Other (No job)	109 (33.5%)	48 (42.5%)	
Monthly Income			.946
<500	222 (69.3%)	76 (67.3%)	
500-1000	70 (21.5%)	26 (23%)	
>1000	33 (10.2%)	11 (9.7%)	
Duration of Staying in Shelter			.619
1-5 years	48 (14.8%)	20 (17.7%)	
6-10 years	53 (16.3%)	15 (13.3%)	
>10 years	224 (68.9%)	78 (69.0%)	
Number of Family Member			.189
0 (No family member)	12 (3.7%)	4 (3.5%)	
1-2	52 (16.0%)	8 (7.1%)	
3-5	177 (54.5%)	68 (60.2%)	
6-10	83 (25.5%)	33 (29.2%)	
>10	1 (0.3%)	0 (0.0%)	

A Chi-square test was run to determine the relationship between all socio-demographic characteristics and the knowledge level. Therefore, Table 10 summarized the results of Chi-square test which a cross-tabulation provided relationship between knowledge levels and socio-demographic characteristics. It was found that registration status had a relationship with a statistically significant ($X^2=14.77, p<0.001$). According to the relationship, it was likely that person who has registered status tend to have low level of knowledge of pulmonary tuberculosis.

Table 11 The relationship between socio-demographic characters and attitude level on pulmonary tuberculosis

Socio-demographic characters	Level of attitude			p-value
	Low level	Moderate level	High level	
Age (years)				.221
18-20	4 (7.8%)	26 (14.7%)	29 (13.8%)	
21-30	10 (19.6%)	65 (36.7%)	59 (28.1%)	
31-40	16 (31.4%)	43 (24.3%)	51 (24.3%)	
41-50	12 (23.5%)	22 (12.4%)	33 (15.7%)	
51-60	5 (9.5%)	12 (6.8%)	24 (11.4%)	
>60	4 (7.8%)	9 (5.1%)	14 (6.7%)	
Gender				.072
Male	25 (49.0%)	80 (45.2%)	76 (36.2%)	
Female	26 (51.0%)	97 (54.8%)	134 (63.8%)	
Marital Status				.137
Single	4 (7.8%)	41 (23.2%)	24 (11.4%)	
Married	44 (86.3%)	116 (65.5%)	163 (77.6%)	
Divorced	0 (0.0%)	7 (4.0%)	3 (1.4%)	
Widow	3 (5.9%)	10 (5.6%)	15 (7.1%)	
Separated	0 (0.0%)	3 (1.7%)	5 (2.4%)	

Table 11 (Continued) The relationship between socio-demographic characters and attitude level on pulmonary tuberculosis

Socio-demographic characters	Level of attitude			p-value
	Low level	Moderate level	High level	
Education				.148
No school	34 (66.7%)	100 (56.5%)	109 (51.9%)	
Primary school	8 (15.7%)	19 (10.7%)	37 (17.6%)	
High school	8 (15.7%)	51 (28.8%)	47 (22.4%)	
College	0 (0.0%)	5 (2.8%)	5 (2.4%)	
Professional/Post	0 (0.0%)	0 (0.0%)	3 (1.4%)	
Religion school	0 (0.0%)	0 (0.0%)	2 (1%)	
Other	1 (2.0%)	1 (0.6%)	7 (3.3%)	
Religion				.207
Buddhism	11 (21.6%)	46 (26.0%)	51 (24.3%)	
Christian	16 (31.4%)	63 (35.6%)	80 (38.1%)	
Hinduism	1 (2.0%)	0 (0.0%)	1 (0.5%)	
Animist	23 (45.1%)	68 (38.4%)	78 (37.2%)	
Ethnicity				.593
Burmese	1(2.0%)	5 (2.9%)	8 (3.8%)	
Dawei	0 (0.0%)	1 (0.6%)	1 (0.5%)	
Mon	1 (2.0%)	1 (0.6%)	0 (0.0%)	
Karenni	49 (96.1%)	165 (95.4%)	197 (98.3%)	
Karen	0 (0.0%)	1 (0.6%)	4 (1.9%)	
Registration Status				$X^2=19.43,$ $p<.001$
Registered	21 (8.5%)	120 (48.8%)	105 (42.7%)	
Unregistered	30 (15.6%)	57 (29.7%)	105 (54.7%)	

Table 11 (Continued) The relationship between socio-demographic characters and attitude level on pulmonary tuberculosis

Socio-demographic characters	Level of attitude			p-value
	Low level	Moderate level	High level	
Recent Job				.657
Agriculture	3 (5.9%)	19 (10.7%)	13 (6.2%)	
Housewife	11 (21.6%)	51 (28.8%)	72 (34.3%)	
Day labor	21 (41.2%)	29 (16.4%)	38 (18.1%)	
Student	1 (2.0%)	6 (3.4%)	17 (8.1%)	
Other (No job)	15 (29.4%)	72 (40.7%)	70 (33.3%)	
Monthly Income				.877
<500	36 (70.6%)	121 (68.4%)	141 (67.1%)	
500-1000	12 (23.5%)	38 (21.5%)	46 (21.9%)	
>1000	3 (5.9%)	18 (10.2%)	23 (11.0%)	
Duration of Staying in Shelter				.386
1-5 years	8 (15.7%)	26 (14.7%)	34 (16.2%)	
6-10 years	7 (13.7%)	35 (19.8%)	26 (12.4%)	
>10 years	36 (70.6%)	116 (65.5%)	150 (71.4%)	
Number of Family Member				.616
No family member	4 (7.8%)	6 (3.4%)	6 (2.9%)	
1-2	7 (13.7%)	25 (14.1%)	28 (13.3%)	
3-5	23 (45.1%)	102 (57.6%)	120 (57.1%)	
6-10	17 (33.3%)	44 (24.9%)	55 (26.2%)	

Table 11 summarized the results of Chi-square test between socio-demographic characteristics and attitude level. All expected cell frequencies were greater than five. It was found that there was a statistically significant.

According to the significant that showed in Table 11 there was a relationship between registration status and attitude level with a statistically significant ($\chi^2=19.43$, $p<0.001$). According to the relationship, it was likely that persons who have registered status tend to have better attitude level towards pulmonary tuberculosis than those who have unregistered status.

Table 12 The relationship between socio-demographic characters and prevention practice level on pulmonary tuberculosis

Socio-demographic characters	Level of prevention practice			p-value
	Low level	Moderate level	High level	
Age (years)				.321
18-20	4 (7.3%)	27 (19.3%)	28 (11.5%)	
21-30	13 (23.6%)	41 (29.3%)	80 (32.9%)	
31-40	18 (32.7%)	33 (23.6%)	59 (24.3%)	
41-50	10 (18.2%)	20 (14.3%)	37 (12.5%)	
51-60	6 (10.9%)	9 (6.4%)	26 (10.7%)	
>60	4 (7.3%)	10 (7.1%)	13 (5.3%)	
Gender				.362
Male	24 (43.6%)	51 (36.4%)	106 (43.6%)	
Female	31 (56.4%)	89 (63.6%)	137 (56.4%)	
Marital Status				.552
Single	4 (8.7%)	30 (21.4%)	35 (14.4%)	
Married	48 (87.3%)	86 (61.4%)	189 (77.8%)	
Divorced	0 (0.0%)	5 (3.6%)	5 (2.3%)	
Widow	3 (5.5%)	15 (10.7%)	10 (4.1%)	
Separated	0 (0.0%)	4 (2.9%)	4 (1.6%)	

Table 12 (Continued) The relationship between socio-demographic characters and prevention practice level on pulmonary tuberculosis

Socio-demographic characters	Level of prevention practice			<i>p</i> -value
	Low level	Moderate level	High level	
Education				.090
No school	38 (69.1%)	76 (77.7%)	129 (53.1%)	
Primary school	7 (12.7%)	21 (15.0%)	36 (14.8%)	
High school	8 (14.5%)	36 (25.7%)	62 (25.5%)	
College	0 (0.0%)	4 (2.9%)	6 (2.5%)	
Professional/Post	0 (0.0%)	0 (0.0%)	3 (1.2%)	
Religion school	0 (0.0%)	2 (1.4%)	1 (0.4%)	
Other	2 (3.6%)	1 (0.7%)	6 (2.5%)	
Religion				.480
Buddhism	11 (20.0%)	32 (22.9%)	65 (26.7%)	
Christian	15 (27.3%)	45 (32.1%)	99 (40.7%)	
Hinduism	0 (0.0%)	0 (0.0%)	2 (0.8%)	
Animist	29 (52.7%)	63 (45.0%)	77 (31.7%)	
Ethnicity				.835
Burmese	1 (1.8%)	3 (2.1%)	10 (4.1%)	
Dawei	0 (0.0%)	1 (0.7%)	1 (0.4%)	
Mon	1 (1.8%)	0 (0.0%)	1 (0.4%)	
Karenni	53 (96.4%)	134 (96.2%)	228 (93.8%)	
Karen	3 (1.2%)	5 (1.1%)	3 (1.2%)	
Registration Status				$X^2=34.91$
Registered	28 (11.4%)	107 (43.5%)	111 (45.1%)	$p=.002$
Unregistered	27 (14.1%)	33 (17.2%)	132 (68.8%)	

Table 12 (Continued) The relationship between socio-demographic characters and prevention practice level on pulmonary tuberculosis

Socio-demographic characters	Level of preventive behavior			<i>p</i> -value
	Low level	Moderate level	High level	
Recent Job				.067
Agriculture	4(7.3%)	16 (11.4%)	15 (6.2%)	
Housewife	12 (21.8%)	48 (34.3%)	74 (30.5%)	
Day labor	18 (32.7%)	20 (14.3%)	50 (20.6%)	
Student	1 (1.8%)	6 (4.3%)	17 (7.0%)	
Other (No job)	20 (36.4%)	50 (35.7%)	87 (35.8%)	
Monthly Income				.441
<500	42 (76.4%)	90 (64.3%)	166 (68.3%)	
500-1000	10 (18.2%)	36 (25.7%)	50 (20.6%)	
>1000	3 (5.5%)	14 (10.0%)	27 (11.1%)	
Duration of Staying in				.396
1-5 years	12 (21.8%)	19 (13.6%)	37 (15.2%)	
6-10 years	7 (12.7%)	18 (12.9%)	43 (17.7%)	
>10 years	36 (65.5%)	103 (73.6%)	163 (67.1%)	
Number of Family Member				.616
No family member	4 (7.8%)	6 (3.4%)	6 (2.9%)	
1-2	7 (13.7%)	25 (14.1%)	28 (13.3%)	
3-5	23 (45.1%)	102 (57.6%)	120 (57.1%)	
6-10	17 (33.3%)	44 (24.9%)	55 (26.2%)	

In Table 12, a Chi-square test for relationship was conducted between all socio-demographic characteristics and prevention practice score. The study found that there was a relationship between registration status of respondent and prevention practice level on pulmonary tuberculosis with a statistically significant ($X^2=34.91, p<0.05$). Regarding the relationship, it was likely that persons who have registered status tend to have better preventive behavior level towards pulmonary tuberculosis than those who have unregistered status.

Table 13 The relationship between knowledge level and attitude level on pulmonary tuberculosis

Level of attitude	Level of knowledge		p-value
	Low level	High level	
Low level	3 (5.9%)	48 (94.1%)	$X^2=154.18, p<0.001$
Moderate level	163 (92.1%)	14 (7.9%)	
High level	159 (75.7%)	51 (24.3%)	

The study used Chi-square test to measure relationship that exists between knowledge level and attitude level of pulmonary tuberculosis. In Table 13, the study found that there was a negative relationship between knowledge level and attitude level on pulmonary tuberculosis with a statistically significant ($X^2=154.18, p<0.001$). This implied that person who had low level of knowledge had better attitude level than those who had high level of knowledge.

Table 14 The relationship between knowledge level and preventive behavior level on pulmonary tuberculosis

Level of preventive behavior	Level of knowledge		p-value
	Low level	High level	
Low level	15 (27.3%)	40 (72.7%)	$X^2=81.82, p<0.001$
Moderate level	126 (90.0%)	14 (10.0%)	
High level	184 (75.7%)	59 (24.3%)	

The result of Chi-square test was shown in Table 14. The result in Table 14 presented relationship between knowledge level and prevention practice level on pulmonary tuberculosis. A positive relationship between both variables was identified as statistically significant ($X^2=81.82$, $p<0.001$). This implied that person who had low level of knowledge had better preventive behavior level than those who had high level of knowledge.

Table 15 The relationship between attitude level and prevention practice level on pulmonary tuberculosis

Level of attitude	Level of preventive behavior			p-value
	Low level	Moderate	High level	
Low level	40 (78.4%)	3 (5.9%)	8 (15.7%)	$X^2=260.36$, $p<0.001$
Moderate level	13 (7.3%)	84 (47.5%)	80 (45.2%)	
High level	2 (1.0%)	53 (25.2%)	155 (73.8%)	

In Table 15, the study found that there was a positive relationship between attitude level and prevention practice level on pulmonary tuberculosis. The Chi-square test introduced the study to the assumption that relationship between those two variables must be considered with a statistically significant ($X^2=260.36$, $p<0.001$). This implied that person who had high level of attitude tend to had high level preventive behavior.

Table 16 The relationship between perceptions and preventive behavior level

Perception	Preventive behavior level			p-value
	Low	Moderate	High	
Perceived susceptibility				$X^2=154.12,$
Low level	40 (57.1%)	15 (21.4%)	15(21.4%)	$p<0.001$
Moderate level	11 (3.7%)	96 (32.5%)	188 (63.7%)	
High level	4 (5.5%)	29 (39.7%)	40 (54.8%)	
Perceived seriousness				$X^2=245.51,$
Low level	42 (73.7%)	6 (10.5%)	9 (15.8%)	$p<0.001$
Moderate level	7 (7.6%)	48 (52.2%)	37 (40.2%)	
High level	6 (2.1%)	86 (29.8%)	197 (68.2%)	
Perceived benefit of PTB prevention practice				$X^2=173.84,$
Low level	18 (72.0%)	3 (12.0%)	4(16.0%)	$p<0.001$
Moderate level	34 (29.8%)	50 (43.9%)	30 (26.3%)	
High level	3 (1.0%)	87 (29.1%)	209 (69.9%)	
Perceived barrier				$X^2=162.92,$
Low level	41 (56.2%)	8 (11.0%)	24 (32.9%)	$p<0.001$
Moderate level	10 (5.7%)	75 (42.9%)	90 (51.4%)	
High level	4 (2.1%)	57 (30.0%)	129 (67.9%)	

Table 16 described the relationships of 4 aspects of perceptions and preventive behavior level, resulting of Chi-square test which the table looked at the relationship Preventive behavior level (dependent) and perceived susceptibility, perceived seriousness, perceived benefit of prevention practice and perceived barrier level (Independent) were revealed. The result presented a relationship between perceived susceptibility and preventive behavior level with statistically significant ($x^2=154.12, p<0.001$). The result was likely suggested that respondents who had moderate level of perceived susceptibility tend to had high level of preventive behavior. There was a relationship between perceived seriousness and preventive behavior level with statistically significant ($x^2=245.51, p<0.001$). It was likely that respondents who had high level of perceived seriousness tend to had high

level of preventive behavior. Relationship between perceived benefit of privation practice of pulmonary tuberculosis and preventive behavior level had a statistically significant with $\chi^2=173.84$, $p<0.001$. The relationship could explain that respondents who had high level of perceived benefit tend to had high level of preventive behavior. Noteworthy, a significant relationship of perceived barrier and preventive behavior ($\chi^2=162.92$, $p<0.001$) was existed and the result of Chi-square test implied that respondents who were categorized as high level of perceived barrier tend to had high level of preventive behavior as well.

Table 17 Comparison of section of respondent among knowledge score, attitude score and prevention practice score

Section	n	Knowledge score		Attitude score		Preventive behavior score	
		Mean	+SD	Mean	+SD	Mean	+SD
1	22	21.04	3.12	53.77	9.96	29.90	4.21
2	22	17.77	4.52	53.68	10.86	30.86	6.59
3	22	15.22	4.75	47.90	6.19	25.90	3.57
4	22	21.31	3.19	47.54	12.34	26.81	7.94
5	22	18.68	2.64	53.13	5.30	26.59	2.42
6	22	19.22	3.90	56.04	3.48	26.81	2.75
7	22	14.54	5.77	49.50	7.48	24.59	5.12
8	22	17.72	3.11	50.40	6.65	30.00	5.00
9	22	13.13	6.31	51.72	5.26	31.18	5.39
10	22	17.54	5.70	46.86	9.66	26.72	6.11
11	22	18.59	4.60	54.27	7.19	28.13	5.60
12	22	22.59	2.80	52.40	12.01	31.63	5.85
13	22	13.68	3.52	49.40	3.72	23.72	3.19
14	20	17.80	5.21	50.60	6.87	29.25	4.82
15	22	15.68	5.50	45.18	7.88	24.77	5.11
16	22	19.04	3.98	56.40	4.55	31.81	2.68
17	22	18.54	4.03	56.81	6.54	31.04	3.45
18	22	19.27	3.91	55.5	7.12	30.40	4.13
19	22	15.40	4.92	50.36	6.92	26.63	3.71
20	22	17.22	2.67	51.63	4.29	30.95	3.82
Total	438	17.94	4.71	51.66	8.29	28.23	5.29

Table 18 Comparison of Socio-demographic of respondent and knowledge score, attitude score and preventive behavior score

Socio-demographic	n	Knowledge score		Attitude score		Preventive behavior score	
		Mean	±SD	Mean	±SD	Mean	±SD
Gender							
Male	181	17.93	4.67	50.87	8.57	28.46	5.37
Female	257	17.54	5.07	52.22	7.83	28.31	5.30
Marital status							
Single	69	16.88	4.60	51.44	6.61	28.31	4.55
Married	323	18.05	5.05	51.60	8.68	28.41	5.60
Divorced	10	15.80	2.93	53.8	4.91	29.6	4.71
Widow	28	16.64	4.32	51.82	7.31	27.57	4.73
Separated	8	16.50	3.96	52.62	4.40	29.00	3.11
Age							
18-20	134	16.57	4.94	52.10	6.97	27.88	4.37
31-40	110	17.50	4.88	51.05	8.54	27.85	5.62
41-50	67	18.38	4.96	51.29	9.30	28.23	5.51
51-60	41	17.95	4.66	52.07	8.40	28.95	5.64
>60	27	17.11	4.72	51.51	9.62	28.25	5.68
Education							
No school	243	17.24	5.07	51.11	8.56	27.97	5.58
Primary school	64	18.40	4.68	52.43	8.75	28.84	5.09
High school	106	18.10	4.60	51.88	6.81	28.91	4.93
College	10	20.80	4.07	53.80	7.43	30.20	4.51
Professional/post graduate	3	20.33	4.72	56.66	1.52	31.66	1.15
Religion school	3	17.33	1.15	54.00	6.55	26.66	5.13
Other	9	16.22	5.69	53.66	10.02	27.55	5.74
Ethnicity							
Burmese	14	17.92	4.42	53.35	8.07	30.00	5.43
Dawei	2	18.00	4.24	55.50	4.94	30.00	7.07
Mon	2	22.50	4.94	40.00	14.14	24.00	8.48
Karenni	411	17.66	4.96	51.67	8.17	28.32	5.34
Karen	5	17.00	3.00	54.60	3.84	29.20	4.65
Shan	4	20.80	1.92	59.0	3.31	34.00	1.22
Recent job							
Agriculture	35	16.40	4.12	51.77	6.41	27.25	5.05
Housewife	134	17.67	4.82	52.72	7.54	28.76	4.87
Day labor	88	18.15	4.90	49.69	9.73	28.47	6.33
Student	24	17.87	3.59	54.54	6.29	30.33	4.50
No job	157	17.73	5.30	51.40	8.12	27.96	5.21

Table 18 (Continued) Comparison of Socio-demographic of respondent and knowledge score, attitude score and preventive behavior score

Socio-demographic	n	Knowledge score		Attitude score		Preventive behavior score	
		Mean	+SD	Mean	+SD	Mean	+SD
Religion							
Buddhism	108	18.38	4.86	51.81	8.47	28.83	5.17
Christian	159	18.20	4.64	52.18	7.65	29.29	4.94
Hinduism	2	23.00	4.24	45.00	21.21	32.50	4.94
Animist	169	16.60	5.05	50.92	8.28	26.98	5.60
Duration of staying in shelter							
1-5	68	18.01	4.89	51.77	8.48	28.17	5.75
6-10	68	17.35	4.53	51.47	7.42	29.23	5.12
>10	302	17.71	5.00	51.68	8.27	28.24	5.27
Number of family member							
No family member	16	17.12	4.93	49.12	9.33	25.62	6.00
1-2	60	17.03	4.02	51.8	8.03	27.53	5.52
3-5	245	18.18	4.93	52.19	8.01	29.09	5.06
6-10	116	17.12	5.22	50.76	8.37	27.75	5.48
>10	1	16.00	-	55.00	-	24.00	-
Expose to pulmonary tuberculosis patient							
Do not know	380	17.81	4.88	51.86	8.15	28.71	5.30
Family member	6	15.66	4.22	54.50	4.32	27.83	2.13
Friend	26	19.15	4.88	47.76	10.26	25.88	6.21
Other	26	15.15	4.63	52.03	5.50	26.19	4.14
Expose to HIV/AIDS patient							
Do not know	348	17.47	4.92	51.56	8.09	28.43	5.37
Family member	25	17.48	5.01	53.16	8.51	28.60	4.85
Friend	44	17.34	4.59	51.63	8.59	27.88	5.62
Other	21	18.09	5.53	51.52	8.45	28.33	5.33
Monthly income							
<500 THB	298	17.63	4.91	51.65	8.28	28.27	5.45
500-1,000 THB	96	17.70	4.93	51.42	8.20	28.26	5.15
>1,000 THB	44	18.13	4.92	52.27	7.32	29.43	4.82
Registration status							
Registered	246	17.02	4.57	51.48	7.08	27.48	4.85
Unregistered	192	18.57	5.18	51.89	9.38	29.54	5.69

Table 19 Kruskal-Wallis one-way analysis of variance between socio-demographic characteristics and knowledge, attitude and prevention practice score towards pulmonary tuberculosis

Socio-demographic	n	Knowledge score		Attitude score		Preventive behavior score	
		Mean Rank	p-value	Mean Rank	p-value	Mean Rank	p-value
Gender			0.726		0.065		0.608
Male	181	222.02		206.23		223.19	
Female	257	217.73		228.84		216.90	
Marital status			0.053		0.710		0.654
Single	69	193.42		199.48		210.10	
Married	323	230.00		223.84		223.22	
Divorced	10	155.25		224.80		244.40	
Widow	28	194.59		217.71		191.30	
Separated	8	187.94		216.69		217.81	
Age			0.289		0.914		0.391
18-20	59	189.04		218.23		196.82	
21-30	134	230.32		218.45		233.64	
31-40	110	213.51		209.79		209.22	
41-50	67	234.63		226.34		217.69	
51-60	41	228.66		231.77		237.96	
>60	27	205.31		231.46		217.20	
Education			0.182		0.318		0.602
No school	243	208.49		211.81		211.52	
Primary school	64	235.34		242.02		229.55	
High school	106	229.15		213.14		228.79	
College	10	298.05		242.35		257.50	
Professional/post graduate	3	285.33		307.33		296.17	
Religion school	3	208.33		249.33		172.17	
Other	9	184.89		277.39		202.17	
Ethnicity			0.756		0.090		0.756
Burmese	14	223.68		245.00		260.29	
Dawei	2	219.00		272.75		252.00	
Mon	2	344.50		70.00		135.75	
Karenni	411	218.78		220.05		218.09	
Karen	5	188.0		257.70		225.90	
Shan	4	256.25		73.63		239.25	
Recent job			0.311		0.101		0.086
Agriculture	35	177.96		205.31		185.96	
Housewife	134	219.13		235.99		225.03	
Day labor	88	232.60		202.19		233.13	
Student	24	221.25		262.52		264.52	
No job	157	221.47		211.72		207.74	

Table 19 (Continued) Kruskal-Wallis one-way analysis of variance between socio-demographic characteristics and knowledge, attitude and preventive behavior score towards pulmonary tuberculosis

Socio-demographic	n	Knowledge score		Attitude score		Preventive behavior score	
		Mean Rank	p-value	Mean Rank	p-value	Mean Rank	p-value
Religion			0.007*		0.779		0.003*
Buddhism	108	237.40		221.61		229.33	
Christian	159	231.08		226.17		239.87	
Hinduism	2	358.00		201.25		321.25	
Animist	169	195.52		212.10		192.85	
Duration of staying in shelter			0.607		0.594		0.332
1-5	68	228.75		224.56		218.90	
6-10	68	207.38		205.33		240.15	
>10	302	220.15		221.55		214.98	
Number of family member			0.189		0.488		0.019*
No family member	16	201.28		187.22		160.06	
1-2	60	200.26		221.05		200.16	
3-5	245	232.55		227.36		235.79	
6-10	116	204.94		206.15		204.47	
>10	1	157.00		266.00		83.50	
Expose to pulmonary tuberculosis patient			0.023*		0.226		0.005*
Do not know	380	222.59		223.24		227.84	
Family member	6	166.33		247.83		182.42	
Friend	26	250.58		174.58		169.56	
Other	26	155.50		203.19		156.10	
Expose to HIV/AIDS patient			0.829		0.716		0.954
Do not know	348	221.31		216.95		220.92	
Family member	25	210.68		246.36		221.10	
Friend	44	205.32		225.01		210.35	
Other	21	229.67		218.24		2131.19	
Monthly income			0.940		0.926		0.433
<500 THB	298	218.89		220.22		217.87	
500-1,000 THB	96	218.50		215.43		214.07	
>1,000 THB	44	225.82		223.49		242.39	
Registration status			<0.001*		0.014*		<0.001*
Registered	246	199.11		206.33		192.12	
Unregistered	192	245.63		236.37		254.58	

Table 18 presented the result of Kruskal-Wallis test which is the nonparametric test equivalent to the one-way ANOVA to allow the comparison of socio-demographic characteristic (independent variables) and knowledge, attitude and prevention practice score (dependent variable). Its result presented that there was a statistically significant differences in knowledge and prevention practice score between groups of religions ($p < 0.05$). Moreover there was statistically significant difference in prevention practice score between the different level of number of family member ($p < 0.05$). Difference of knowledge and prevention practice score of pulmonary tuberculosis for each category of history of exposing to pulmonary tuberculosis patient was statistically significant ($p < 0.05$). Finally, Kruskal-Wallis test was run and determined that were differences in knowledge ($p < 0.001$), attitude ($p < 0.05$) and prevention practice score for each registration status group ($p < 0.001$).

CHAPTER V

CONCLUSION, DISCUSSION, AND RECOMMENDATION

5.1 Conclusion

Pulmonary tuberculosis is considered a health problem in vulnerable people over the past decade, it is on rising in many countries worldwide. The burden of pulmonary tuberculosis is considerably high in Asia, which Myanmar and Thailand are ranked on 22 high tuberculosis burden countries since the annual report of Global Tuberculosis report 2012. According to WHO, in each year there are 8 to 10 million people who have been diagnosed as new case of pulmonary tuberculosis and more than millions of them die because of this disease.

The aims of this study were to assess knowledge, attitude, and preventive behavior of pulmonary tuberculosis among Myanmar refugee in Ban Mai Nai Soi temporary shelter, Mae Hong Son province, Thailand.

A cross-sectional descriptive study was conducted on March 2013 at Ban Mai Nai Soi temporary shelter, Mae Hong Son, Thailand. Data collecting from structured questionnaire by face-to-face interview were analyzed using SPSS software (version 17). Chi-square test was used for analysis of variables relationship. Based on 70% cutoff point from total expected score, knowledge score was categorized into low level/need an improvement and high level of knowledge. Attitude and preventive behavior score were categorized into low level, moderate level and high level base on the range of score on average. Relationships between variable by Chi-square test were considered statistically significant at P-value less than 0.05. This survey involved with 438 male and female Myanmar refugees who were age from 18 years old and above in Ban Mai Nai Soi temporary shelter, Mae Hong Son province, Thailand. The study found out that mean of knowledge score was 17.7 ± 4.9 and 69.9% of the participants referred to low level of knowledge. Mean score of attitude was 51.6 ± 8.1 and 47.9% of respondents were categorized as a high level of attitude and 177 (40.4%) respondents were categorized as moderate level of attitude. It was found that 51 (11.6%) of respondents were accounted for low level of attitude on pulmonary tuberculosis. Regarding preventive behavior, it was found that mean score was

28.3 ± 5.3 and 55.5% had high level, 32% had moderate level and 12.6% had low level of preventive behavior respectively. The results upon Chi-square test revealed significant negative relationships between knowledge and attitude level, knowledge and preventive behavior level, and there was a positive relationship between attitude and preventive behavior level ($p < 0.001$). Additionally, there were positive relationships of preventive behavior level and four aspects of perceptions which concerned perceived susceptibility, perceived seriousness, perceived benefit of prevention practice and perceived barrier, and preventive behavior level. The result presented a relationship between perceived susceptibility and preventive behavior level with statistically significant $p < 0.001$). Additionally, there were positive relationships of preventive behavior level and four aspects of perceptions which concerned perceived susceptibility, perceived seriousness, perceived benefit of prevention practice and perceived barrier, and preventive behavior level with statistically significant ($p < 0.001$).

This study highlighted the gap of knowledge among the respondents which it needs for IEC programs (information, education and communication) on pulmonary tuberculosis among this population. Therefore, all evidences from this study should be taken to implement educational programs together with BCC strategy (behavior change communication) to remove the gap and create sustainable awareness and behavior regarding pulmonary tuberculosis.

5.2 Discussion

The study of “Assessment of knowledge, attitude and preventive behavior of pulmonary tuberculosis among Myanmar refugees in Ban Mai Nai Soi temporary shelter, Mae Hong Son, Thailand” was a cross sectional study which was conducted on March 2013. All respondents (n=438) were recruited on volunteer from their family, by randomizing 22 households from each of 20 sections in the shelter. This study was expected to have 440, eventually 2 respondents dropped out during data collection. The study focused on socio-demographic characteristics distribution, knowledge level, attitude level and prevention practice level of respondents as well

as the relationship among these variables. More specifically, the main objectives of this study are shown as the following.

1. To explicate the characteristic of socio-demographic distribution among refugee in Ban Mai Nai Soi temporary shelter, Mae Hong Son Province, Thailand.
2. To explore knowledge levels of Pulmonary Tuberculosis among refugee in Ban Mai Nai Soi temporary shelter, Mae Hong Son Province, Thailand.
3. To determine the levels of attitude towards Pulmonary Tuberculosis preventive behaviors among refugee in Ban Mai Nai Soi temporary shelter, Mae Hong Son Province, Thailand.
4. To explore the level of Pulmonary Tuberculosis preventive behaviors among refugee in Ban Mai Nai Soi temporary shelter, Mae Hong Son Province, Thailand.
5. To determine the relationship between socio-demographic, Pulmonary Tuberculosis knowledge, and attitudes, with Pulmonary Tuberculosis preventive behaviors among refugee in Ban Mai Nai Soi temporary shelter, Mae Hong Son Province, Thailand.

5.2.1 Socio-demographic characters

Regarding face to face interview with 438 respondents who came from all 20 sections of Ban Mai Nai Soi temporary shelter, the data from this study showed that around 60% of the respondents were female (257, 58.7%) and the rest of respondents were male (181, 41.3%). The majority was respondent who age between 21 to 40 years old. There were 323 (73.7%) respondents with married status which was considered a major group of this study. Additionally, half of them had never attended any of school (243, 55.5%), while one third of respondents graduated from high school and college (116, 26.5%) and only 3(0.7%) respondents had professional/post graduate. Religion was mostly distributed among Buddhism (108, 24.7%), Christian (164, 37.4%) and interestingly some of the respondent were animism (165, 37.6%), it a religion that common in tribe people, it is so fundamental believing in spiritual essence, natural and plant. In addition, almost of

Animism were Karenni (411, 93.8%) who basically escaped from Kayah state in Myanmar, they were contributed to the majority group of this survey, though researcher found other ethnicity such as Burmese (14, 3.2%), Dawei (2, 0.5%), Mon (2, 0.5%), Karen (5, 1.1%) and Shan (4, 0.9%) but they contributed only small proportion.

United Nation High Commissioners for Refugees or UNHCR was one variable to determine the character of respondents in the shelter whether they had been registered to be refugee status officially or not. There was a wide gap between them because 246 (56.2%) of respondents carried registered status and were identified as a refugee by UNHCR, but 192 (43.8%) respondents did not. Interestingly, 302 (68.9%) respondents have been living in this shelter more than 10 years, 68 (15.5%) 1 to 5 years and 6-10 year was 68(15.5%) respondents. Furthermore, an analyzing of all individual socio-demographic profiles, the survey reveal 298 (68.%) no income group. Only 44 (10%) of respondents earned monthly income more than 1,000 Thai Baht and 96 (21.9%) had 500 to 1,000 Thai Baht per month. The recent variable could describe itself, by living in the shelter which was a closed community. Refugees are not able to go outside of the shelter and of course, they are not allowed by the local administrative office. Therefore, another socio-demographic character which was being affected and made respondents a low socio-demographic profile was their recent job. More than one third of respondents 157 (35.8%) were unemployed (No job), this seemed to be an inconsistent with study among Myanmar migrants in Phuket, Thailand in 2008 regarding preventive behavior of tuberculosis because more than half of those had income and job.

5.2.2 Knowledge of pulmonary tuberculosis

Regarding the overall knowledge of pulmonary tuberculosis among this population, researcher used the questionnaire with 32 items of knowledge such as causes, mode of transmission and prevention and symptom, diagnosis and treatment. Score was a total number of items they answered correctly. Out of expected total 32 points, the mean of knowledge score was 17.7 ± 4.9 points.

To assess level of knowledge of all 438 respondents, this study categorized level of knowledge of tuberculosis into 2 groups based on 70% cutoff total score. Low level of knowledge/need an improvement, included respondents who had 0 to 21 and respondents who scored 22 to 32 points were considered high level of knowledge/good.

It was found that 325 or 74.2% out of 438 respondents who volunteered on this study had low level of knowledge of pulmonary tuberculosis. In other words, this result was consistent with previous study that Thwin, 2008 had been published regarding knowledge of tuberculosis among Myanmar migrants in Phuket, Thailand, the finding was 69.9% of the participants either referred to low level of knowledge (Thwin, 2008). Meanwhile, one third or around 30% of the rest were considered high level of knowledge/good. In addition, the finding from studying among guardians of patient at the pediatric out-patient department, Siridhorn hospital, Bangkok revealed that almost 60% of respondent were accounted for low level of knowledge even though it was not the same characteristic population (Suree Jirapaiboonsuk, 2009). The similarity study which was done in Tajikistan, its exploring showed TB-related knowledge among migrant workers. Regarding the study, only 20% of respondent were estimated to have sufficient knowledge of TB (Gilpin, 2011). The community based cross-sectional study demonstrated that there was a wide gap of pulmonary tuberculosis among the respondents (Mesfin et al., 2005). Almost half of all respondents had misconception of PTB transmission and treatment. Deficiencies in public health knowledge about pulmonary tuberculosis symptom, diagnosis and treatment were presented among slum populations of Uganda (Obuku, 2012).

On a final note, the study focused on finding relationship between knowledge level and socio-demographic characters, Attitude level and prevention practice level. The results of Chi-square test between knowledge levels and socio-demographic characteristics found that registration status had a relationship with knowledge level with a statistically significant ($\chi^2=14.77$, $p<.001$). According to the relationship, it was likely that person who has registered status tend to have low level of knowledge of pulmonary tuberculosis.

Additionally, another finding presented a negative relationship between knowledge level and attitude level on pulmonary tuberculosis with a statistically significant ($p < 0.001$). Finally, the result Chi-square test presented relationship between knowledge level and preventive behavior level on pulmonary tuberculosis. The negative relationship between both variables was identified as statistically significant ($p < 0.001$). This was similar to the finding of a study among Myanmar migrants in Phuket province, Thailand, it was found a relationship between knowledge and attitude with a statistically significant at $p < 0.001$ (Thwin, 2008). To emphasize the relationship between knowledge and prevention practice, there was a study which presented the negative relationship between knowledge score and prevention practice score with the statistically significant result of Chi-square test at $p < 0.001$ (Suree Jirapaiboonsuk, 2009).

5.2.3 Attitude on pulmonary tuberculosis

Questionnaire based was developed to be a tool of this study together with face-to-face interview. Study aimed to assess attitude on respondents who were representative Myanmar refugees in BanMai Nai Soi temporary shelter. In the structured questionnaire, there were 32 items of attitudes towards pulmonary tuberculosis, 3 for Agree, 2 points for Neutral and 1 point for disagree. Total scores were eventually categorized by dividing with 32 of items. Mean score of attitude was 51.6 ± 8.1 . Individual score then was categorized based on range from 1 to 3 points into 3 groups of respondent mainly. Those 3 groups allowed researcher to determine frequency and percentage of low level of attitude, moderate level of attitude and high of attitude among all respondents.

Overall, 210 (47.9%) of respondents were categorized as a high level of attitude and 177 (40.4%) respondents were categorized as moderate level of attitude. It was obviously found that 51 (11.6%) of respondents were accounted for low level of attitude on pulmonary tuberculosis. While, researcher found only 11.6 % of respondents with low level of attitude towards pulmonary tuberculosis, the finding from Myanmar migrants that was done in Phuket was 54.7%, (Thwin,

2008). This implied that Myanmar refugees in Ban mai Nai Soi temporary shelter had a better attitude than Myanmar migrants in Muang district, Phuket, Thailand.

According to health belief model, this survey found positive relationships of four aspects of perceptions which concerned perceived susceptibility, perceived seriousness, perceived benefit of prevention practice and perceived barrier, and preventive behavior level. The result presented a relationship between perceived susceptibility and preventive behavior level with statistically significant ($\chi^2=154.12$, $p<0.001$). The result was likely suggested that respondents who had moderate level of perceived susceptibility tend to had high level of preventive behavior. There was a relationship between perceived seriousness and preventive behavior level with statistically significant ($\chi^2=245.51$, $p<0.001$). It was likely that respondents who had high level of perceived seriousness tend to had high level of preventive behavior. Relationship between perceived benefit of privation practice of pulmonary tuberculosis and preventive behavior level had a statistically significant with $\chi^2=173.84$, $p<0.001$. The relationship could explain that respondents who had high level of perceived benefit tend to had high level of preventive behavior. Another finding of this study identified a significant relationship of perceived barrier and preventive behavior ($\chi^2=162.92$, $p<0.001$) was existed and the result of Chi-square test implied that respondents who were categorized as high level of perceived barrier tend to had high level of preventive behavior. Similar to this study at Phuket province, Thailand, the finding revealed positively association between perception and prevention behavior of tuberculosis as a significant but perceived barrier was not consistently associated with preventive behavior (Thwin, 2008).

With the attitude level of respondent towards pulmonary tuberculosis, it expressed relationship to all socio demographic characters, history of exposing pulmonary tuberculosis patients and HIV/AIDS patients, resulting non-statistically significant between socio-demographic characters and attitudes levels. In contrast, the study among migrant worker in Tajikistan found that there were a statistically significant between gender and attitude (Gilpin, 2011). The study also revealed that there was an association between education level and attitude level where

respondents with lower education had much positive attitude compared to those with higher level of education (Gilpin, 2011).

The result with statistically significant supported the hypotheses of this study that there was a relationship between attitude levels and preventive behaviors among Myanmar refugees in Ban Mai Nai Soi temporary shelter, Mae Hong Son Province, Thailand.

5.2.4 Preventive behavior of pulmonary tuberculosis

To summarize this dependent variable, the study provide mean of prevention practice or preventive behavior, it was found that mean score was 28.3 ± 5.3 from expected total score of 36 points from 12 items which 3 points for Always, 2 points for Some time and 1 point for Never. Arranging score from 1 to 3 categorized respondents into 3 groups based on range, low level of preventive behavior, moderate level of preventive behavior and high level of preventive behavior. The result, which described level of preventive behavior following, presented half of respondent (55.5%) had high level of preventive behavior, 32% had moderate level of preventive behavior and 12.6% had low level of preventive behavior respectively. This could describe that more than half of respondent have had high level of preventive behavior of pulmonary tuberculosis. Previous study in 2008 showed that more than two third of Myanmar migrants (62%) had good level of preventive behavior (Thwin, 2008). This could lead researcher to understand the difficulties of Myanmar refugee living in such a remote area.

In addition, it was noted that there were positive relationships between preventive behavior and attitude on pulmonary tuberculosis with statistically significant ($\chi^2=260.36$, $p<0.001$). This result is consistent with the findings of the study in 2008 among Myanmar migrants in Phuket in which a significant association was found between knowledge and preventive practice of tuberculosis (Thwin, 2008: 25).

However, the survey had brought out interesting information and concern. Preventive behavior level was high among the respondents and could be influenced by attitude towards pulmonary tuberculosis. But the limitation of this survey was applying questionnaire face-to-face interview. Questionnaire of this study was designed for closed-end questions which respondent can response to the frequency of applying each item of prevention behavior as Always, Sometimes and never. This encouraged further study to have more effective survey asking question in variety of ways and consider both opened-ended and closed-ended on the survey (WHO, 2012). Consider of using closed-ended questions to assess preventive behavior in this study were that easy to analyzed, each questions still have significance differences in term of self-prevention practice though. Therefore scoring of each prevention practice should be considered or prioritized by the important its practice.

Some information biases were able to cause by this limited survey tool (Haasnoot, 2010). This could not have result in an actual preventive behavior, because respondents could provide answers dishonestly to please researcher during interview. The finding of this study encourage further research into observation behavioral activity related to pulmonary tuberculosis prevention which is much more effectiveness in term of public health survey and assessment.

5.3 Recommendation

This study is a representative of Myanmar refugees population who are living in Ban Mai Nai Soi temporary shelter, Mae Hong Son province, Thailand to collect what is believed, known and done in term of public health and pulmonary tuberculosis in particular. This should be a guide for health program or every organization who involved with these vulnerable populations to conduct advocacy, communication, and social mobilization activities in order to protect them from the disease onwards.

Finding from this study will not be the resource to serve as a definitive TB program or health care service but could be study tool for the further surveys. Regarding the gap of knowledge, identifying the factors related to their knowledge or source of information should be applied. This is therefore suggested that a qualitative study and focus group discussion should be considered to understand and determine barrier of educational message/information transmission and to find out the way to remove them.

The fact that knowledge and attitude have relationships with prevention practice or preventive behavior among Myanmar refugees, this means their prevention behavior regarding pulmonary tuberculosis will be influenced by individual characteristics, such as knowledge and attitude/belief at the individual level. It is the most basic one in view of health promotion practice, so Myanmar refugees will be able to understand correctly regarding pulmonary tuberculosis if knowledge of pulmonary tuberculosis is provided properly, they will have attitude to evaluate their own self-practice/prevention behavior in the future.

For further study and research, using findings from this study as a foundation for developing of health invention study should be considered. One of the challenge for those concerned with pulmonary tuberculosis prevention is identifying and learning the source of information that people are having and be able to access as well as which determinants, factors or source have more influence to this population.

On the final note, this study has found the individual characteristic which influence preventive behavior among Myanmar refugees, in depth study on interpersonal level to addressing factor influencing their preventive behavior, such as family, friends and peers that provide social identity should be taken place as well as addressing factors from community level, such as rules, regulations, policies and norm which might constrain or promote prevention behavior due to the fact that not only knowledge and attitude that influence their behavior. Qualitative research methods which contains semi-structure tools and require small group of participant should be considered. Focus group discussion will explore opinions of Myanmar

refugee regarding the disease. Individual interview by using a semi-structure topic guide is basically provide an individual experiences as well as opinion regarding pulmonary tuberculosis this can be conducted with them to learn about their actual attitude and prevention practices. Participant observation will provide information on actual prevention behaviors, the result form observation would help researcher to understand and discover how Myanmar refugees interact with the disease and what information or factor that influence their knowledge, attitude and preventive behavior on pulmonary tuberculosis and might explore about their relationship eventually.

REFERENCE

- Auer, C., Sarol, J., Tanner, M., and Weiss, M. Health seeking and perceived causes of Tuberculosis among patients in Manila, Philippines. Tropical Medicine and International Health 5 (September 2000): 648-656.
- Bunnareth, T. Factor associated with an unsuccessful treatment of Pulmonary Tuberculosis in Kampong Thom Province, Cambodia. Master's Thesis, Faculty of Public Health, Mahidol University, 2000.
- Carmine, J. et al. Guidelines for preventing the transmission of Mycobacterium Tuberculosis in health-care facilities[Online]. 1994. Available from: <http://www.cdc.gov/mmwr/preview/mmwrhtml/00035909.htm>[2012, September 10]
- Center for Disease Control and Prevention. Guidelines for preventing the transmission of Mycobacterium Tuberculosis in health-care settings. Morbidity and Mortality Weekly Report 54(December 2005): 1-80.
- Center for Disease Control and Prevention. TB symptoms[online]. 2012. Available from: <http://www.cdc.gov/tb/topic/basics/default.htm>[2012, September 10]
- Gilpin, C., Colombani, P., Hasanava, S., and Sirodjiddinova, U. Exploring TB-related knowledge, attitude, behaviour, and practice among migrant workers in Tajikistan. Tuberculosis Research and Treatment 2011 (2011): 10.
- Govender, T. Tuberculosis, DOTS cure for all, south Africa, 1998/1999.
- Haasnoot, P. J., Boeting, T. E., Kuney, M. O., and Roosmalen, J. Knowledge, Attitudes, and Practice of Tuberculosis among Maasai in Simanjiro District, Tanzania. The American Society of Tropical Medicine and Hygiene 2010, 83(4): 902-905.
- Ilongo, I. Tuberculosis health belief gaps of Tuberculosis and suspected Tuberculosis cases in New York city. International Journal of Clinical and Health Psychology 4(2004): 69-90.
- Kanlaya Vanichbuncha. Statistic for research. Thamasarn publishing 2010.

- Liefooghe, R., Baliddawa, B. J., Kipruto, E. M., Vermeire, C., and De Munynck, A. O. From their own perspective. A Kenyan community's perception of Tuberculosis. Tropical Medicine and International Health 2(August 1997): 809-821.
- Mesfin, M. M., Taesew, T. W., Tareke, I. G., Mulugeta, G. WM, and Richard, M. J. Community knowledge, attitudes and practices on pulmonary Tuberculosis and their choice of treatment supervisor in Tigray, northern Ethiopia. The Ethiopian Journal of Health Development 19(2005): 21-27.
- Mtaita, G. R. Knowledge Awareness and Practices Regarding Tuberculosis among Gold Miners in Tanzania. Master's Thesis, Department of Public Health, University of South Africa, 2009.
- Muhammad, U.M. et al. Urban-rural inequities in knowledge, attitudes and practices regarding tuberculosis in two districts of Pakistan's Punjab province. International Journal for Equity in Health 10 (2011): 8.
- Obuku, E.A. et al. Scio-demographic determinants and prevalence of tuberculosis knowledge in three slum population of Uganda. Biomed Central 12 (2012): 5.
- Orrett, F., and Shurland, S. Knowledge and awareness of tuberculosis among pre-university students in Trinidad. Journal of Community Health 26, 6:479-485
- Public Health, Ministry. Bureau of Epidemiology, Department of Disease Control. Tuberculosis of situation in Thailand. Weekly Epidemiological Surveillance Report 38(March 2007): 161-167.
- Public Health, Ministry. Bureau of Epidemiology, Department of Disease Control. Weekly Epidemiological Surveillance Report. 42(2011)
- Suree Jirapaiboonsuk. Knowledge, Attitude, and Practices towards Childhood Tuberculosis in Guardians of Out-patients visiting the Pediatric Out-patient Department, Sirindhorn hospital, Bangkok. Master's Thesis, Collage of Public Health Sciences, Chulalongkorn University, 2009.
- Thailand Burma Border Consortium. Programme Report January to June 2012. , 2012.

- Thu, A. Win, H. Nyunt, M-T and Lwin, T. Knowledge, attitude and practice concerning Tuberculosis in a growing industrialized in Myanmar. The International Journal of Tuberculosis and Lung Disease. 16(March 2012): 330-335.
- Thwin, H. T. Preventive Behaviors of Tuberculosis Among Myanmar Migrants at Muang District, Phuket, Thailand. Master's Thesis, Collage of Public Health Sciences, Chulalongkorn University, 2004.
- Tongsukh Dilok. TB infection and treatment among refugees in Tham Hin camp, Ratchaburi, Thailand. Master's Thesis, Department of Tropical Medicine, Mahidol University, 2009.
- Wang, J. Fei, Y. Shen, H and Xu, B. Gender difference in knowledge of Tuberculosis and associated health-care seeking behaviors: a cross-sectional study in a rural area of China. BMC Public Health 2008[online]. 2008. Available from: <http://www.biomedcentral.com/1471-2458/8/354> [2012, September 10]
- Watinee Boonchalaksi and Kanya Apipornchaikul. International Migration and Health. In Churnretai Kanchanachitra (ed.), Thai Health 2012, pp.18-19. Nakhon Pathom: The Institute for Population and Social Research Mahidol University, 2012.
- Worachet Teacharak. Tuberculosis Situation in Maung Mae Hong Son District, Thailand. Health System Research Institute and Alliances 1(January-March 2008) : 831-836.
- World Health Organization. Stop Tuberculosis at the source Geneva, 1998
- World Health Organization. Thailand Border Health Program, 2006.
- World Health Organization. Global Tuberculosis Report 2012, 2012.
- World Health Organization. Advocacy, communication and social mobilization for TB control: A guide to developing knowledge, attitude and practice Surveys [Online]. 2008. Available from:http://www.stoptb.org/assets/documents/resources/publications/acsm/ACSM_KAP%20GUIDE.pdf; Accessed: [2012, November]

APPENDICES

**APPENDIX B
BUDGET PLAN**

Activities	Unit Price THB	Total Unit	Total Budget THB
A. Pilot Test Photocopy (questionnaire)	5	20	100
B. Data Collection: Phase I Photocopy (questionnaire)	5	420	2100
C. Data Collection: Phase II Photocopy (questionnaire)	5	420	2100
D. Translation Translate the questionnaire	3000	1	3000
E. Research Assistant Person/Day	500	8	4000
F. Transportation	1500	2	3000
G. Accommodation	800	10	8000
H. Thesis Documentation	1000	1	1000
Total			23,300

APPENDIX C QUESTIONNAIRE (English version)

This research is about assessment of knowledge, attitude and preventive behaviors of
Pulmonary Tuberculosis. Please answer according to fact of your case.

Subject code

Date...../...../.....

Interviewer code

A) Socio- demographic Characteristics

1) What is your age?

_____ years

2) What is your gender?

1. Male

2. Female

3. Prefer not to answer.

3) What is your marital status?

1. Single

2. Married

3. Divorced

4. Widow

5. Separated

6. Others (please specify).....

4) How many of your family member?

5) What is your education?

1. No school

2. Primary school

3. High school

4. College

5. Professional or Post-Graduate

6. Religious School only

7. Other (specify).....

6) What is your religion?

1. Buddhism

2. Christian

3. Hinduism

4. Other (specify).....

7) What is your ethnicity?

- | | |
|--------------------|------------|
| 1. Burmese | 2. Dawei |
| 3. Mon | 4. Rakhine |
| 5. Other (specify) | |

8) What is your recent job? (choose only 1 item)

1. Agriculture
2. Housewife
3. Day laborer
4. Student
- 5 Other (specify).....

9) What is your monthly income?

_____ Baht

10) How long have you been living in this shelter?

_____ years _____ months

11) What about your registration status with UNHCR?

- | | |
|---------------|-----------------|
| 1. Registered | 2. Unregistered |
|---------------|-----------------|

12) Do you know people who have/had pulmonary TB?

- | | |
|----------------|------------------|
| 1. Do not know | 2. Family member |
| 3. Friend | 4. Other..... |

13) Do you know people who have/had HIV or AIDS?

- | | |
|----------------|------------------|
| 1. Do not know | 2. Family member |
| 3. Friend | 4. Other..... |

B) Knowledge about pulmonary tuberculosis (PTB).

Statement	Correct	Incorrect	Don't know
<p>Causes, mode of transmission and prevention</p> <p>1. Pulmonary tuberculosis is an infectious disease caused by</p> <ul style="list-style-type: none"> 1.1 Bacteria/germ 1.2 Cold air 1.3 Shortage of food 1.4 Smoking, chewing, drinking alcohol 1.5 Hot climate 1.6 Hard work <p>2. Pulmonary tuberculosis can be transmitted by mosquito.</p> <p>3. Pulmonary tuberculosis can be transmitted from patient respiratory system.</p> <p>4. A person can get PTB through: (use affirmative sentence, not question or refusal statement)</p> <ul style="list-style-type: none"> 4.1 Handshake 4.2 Air when a person with PTB coughs or sneezes 4.3 Sharing dishes 4.4 Touching items in public places <p>5. BCG vaccine can prevent children from PTB.</p> <p>6. HIV/AIDS patient has a risk of developing PTB.</p>			
<p>Symptom, diagnosis and treatment</p> <p>7. Apart from lung, PTB can cause disease at</p> <ul style="list-style-type: none"> 7.1 Bone 7.2 Joints 7.3 Lymph node 7.4 Brain <p>8. The followings are signs and symptoms of PTB</p> <ul style="list-style-type: none"> 8.1 Rash 8.2 Cough that last longer than 3 weeks 8.3 Coughing up blood 8.4 Severe headache 8.5 Weight loss 8.6 Loss appetite 8.7 Fever and sweat at night 8.8 Chest pain <p>9. Diagnosis of PTB is done by sputum examination.</p> <p>10. Taking Chest X-rays is the important test in diagnosing PTB.</p> <p>11. PTB is cured by rest only (no need to take anti PTB drugs)</p> <p>12. PTB is cured if anti PTB drugs are taken regularly and full course.</p> <p>13. Traditional medicine is cheaper and more effective than anti PTB drugs.</p> <p>14. Anti PTB drugs can cause discomfort and can give side effects</p>			

C. Attitudes on pulmonary tuberculosis (PTB)

Statement	Agree	Neutral	Disagree
<p>Susceptibility</p> <p>1. Pulmonary tuberculosis mostly attacks</p> <p> 1.1 Men</p> <p> 1.2 Women</p> <p>2. Persons infected with HIV/AIDS is easily infected with PTB.</p> <p>3. Person in close contact with PTB patient can get PTB.</p> <p>4. Malnourished and poor people are at risk of PTB.</p> <p>5. PTB can be transmitted if working together with PTB patient.</p> <p>6. Patient with PTB should be regarded as outcast</p> <p>Seriousness</p> <p>7. PTB is dangerous and can lead to death.</p> <p>8. Delay in treatment can be fatal.</p> <p>9. You can be dismissed from PTB if your employer knows that you have PTB.</p> <p>10. You can be discriminated from friends if they know that you have PTB.</p> <p>11. If I have PTB it will seriously disturb my family relation</p> <p>Benefit of preventive behaviors</p> <p>12. If you can stay in a well-ventilated house, you can prevent PTB.</p> <p>13. You close your mouth and nose if someone who has PTB cough or sneeze besides you, you can prevent PTB.</p> <p>14. It is important to take PTB medication regularly if you have the disease</p> <p>15. Seeking immediate advice if you suspect that you have PTB symptom</p> <p>Barriers</p> <p>16. You are so poor to have good foods that have variety of nutrients though you want to have them.</p> <p>17. You can't stay in a well-ventilated house to prevent PTB though you want to.</p> <p>18. You can't escape from working together with PTB patients to prevent PTB.</p> <p>19. You can't escape from staying in a crowded home to prevent PTB.</p> <p>20. You can't seek health as soon as you are ill because you afraid of local authorities.</p> <p>21. You can't seek health as soon as you are ill because of language barriers.</p> <p>22. You are hesitant to go hospital/clinic for PTB examination because doctor may found something wrong with your lungs/body</p>			

D). Prevention practice on pulmonary tuberculosis infection

Statement	Always	Sometimes	Never
1. You eat good foods that have variety of nutrients to prevent PTB. (E.g. Vegetable, meat, fish equally) 2. You encourage getting BCG vaccination when you see the child less than one year old. 3. You seek health service from health professional. 4. Going for examination whenever you have suspect signs of PTB. 5. You keep your house to get good ventilation and sunlight. 6. You avoid too close to PTB patients. 7. You read or heard health news about PTB, HIV/AIDS. 8. You should be taken this practice to prevent PTB transmission <ul style="list-style-type: none"> 8.1 Avoid sharing cup with PTB patient 8.2 Do not cough/sneeze at other people 8.3 Do not spit everywhere 8.4 Use separate room for PTB patient 8.5 Find early treatment 			

“Thank you for participating this survey”

APPENDIX D QUESTIONNAIRE (Myanmar version)

ဤသုခသနသည် အဆုတ်တီဘီရောဂါနှင့်ပတ်သက်၍ ကြိုတင်ကာကွယ်သည့် အပြုအမူများ၊ သဘောထားနဲ့ အသိပညာများအပေါ် ရှုထောင့်ချိန်သုံးသပ်ချက်ဖြစ်သည်။ ကျေးဇူးပြု၍ အောက်ပါမေးခွန်းများကို ဖြေဆိုပါ။

အကြောင်းအရာကုတ်နံပါတ်..... နေ့စွဲ...../...../.....
တွေ့ဆုံမေးမြန်းသူကုတ်နံပါတ်.....

(က) အချက်အလက်ပိုသေသများ

(၁) အသက်အရွယ်

_____နှစ်

(၂) ကျား/မ

၁။ ကျား

၂။ မ

၂။ မသိပါ

(၃) အိမ်ထောင်ရှိ/မရှိ

၁။ အိမ်ထောင်မရှိ

၂။ အိမ်ထောင်ရှိ

၂။ တရားဝင်ကွာရှင်း

၄။ အိမ်ထောင်ဘက်ကွယ်လွန်

၅။ အိမ်ထောင်ကွဲနေ

၆။ အခြားအရာများ (အတိအကျဖော်ပြပါ)

(၄) မိသားစုဝင်အရေအတွက်

(၅) ပညာအရည်အချင်း

၁။ ကျောင်းမနေပါ

၂။ မူလတန်းပညာ

၃။ အထက်တန်းအဆင့်

၄။ ကောလိပ်

၅။ ဘွဲ့လွန်

၆။ ဘာသာရေးကျောင်းသာတက်ဖူးသည်

၇။ အခြားအရာများ (အတိအကျဖော်ပြပါ).....

(၆) ကိုးကွယ်သည့်ဘာသာ

၁။ ဗုဒ္ဓဘာသာ

၂။ ခရစ်ယာန်ဘာသာ

၃။ ဟိန္ဒူဘာသာ

၄။ အခြားသောအရာများ (အတိအကျဖော်ပြပါ).....

(၇) လူမျိုး

၁။ ဗမာ

၂။ ထားဝယ်

၃။ မွန်

၄။ ရခိုင်

၅။ အခြားအရာများ (အတိအကျဖော်ပြပါ).....

(၈) လက်ရှိအလုပ်အကိုင် (တစ်ခုသာလျှင် ရွေးချယ်ပါ)

- ၁။ စိုက်ပျိုးမွေးမြူရေးလုပ်ငန်း
- ၂။ အိမ်ရှင်မ
- ၃။ နေ့စား
- ၄။ ကျောင်းသား
- ၅။ အခြားအရာများ (အတိအကျဖော်ပြပါ).....

(၉) သင်၏တစ်လစာဝင်ငွေကိုဖော်ပြပါ

_____ ထိုင်းဘတ်

(၁၀) ဤနေရာတွင်နေထိုင်သည်မှာ မည်မျှကြာပြီလဲ။

_____ နှစ် _____ လ

(၁၁) ကုလသမဂ္ဂဒုက္ခသည်များဆိုင်ရာမဟာမင်းကြီးရုံး၏အဖွဲ့ဝင်

- ၁။ အသင်းဝင်ထားသည်
- ၂။ အသင်းဝင်ထားခြင်းမရှိပါ

(၁၂) အဆုတ်တီဘီရောဂါရှိနေသည့်သူ(သို့) ဖြစ်ဖူးသည့်သူနှင့်သိကျွမ်းပါသလား

- ၁။ မသိပါ
- ၂။ မိသားစုဝင်ရှိသည်
- ၃။ သူငယ်ချင်းရှိသည်
- ၄။ အခြားအရာများ.....

(၁၃) အိတ်ချ်အိုင်စီပိုး (သို့) အေအိုင်ဒီအက်စ်ရှိသူ၊ ဖြစ်ဖူးသူနှင့် သိကျွမ်းပါသလား

- ၁။ မသိပါ
- ၂။ မိသားစုဝင်ရှိသည်
- ၃။ သူငယ်ချင်းရှိသည်
- ၄။ အခြားအရာများ.....

(ခ) အဆုတ်တီဘီရောဂါ၏ သိကောင်းစရာများ

ဖော်ပြချက်	မှန်	မှား	မသိပါ
<p>ဖြစ်ပွားရသည့်အကြောင်းရင်း၊ ကူးစက်ပုံနည်းလမ်းများနှင့် တားဆီးကာကွယ်ခြင်း</p> <p>၁။ အဆုတ်တီဘီရောဂါသည် ကူးစက်နိုင်သော ရောဂါတစ်မျိုးဖြစ်သည်</p> <p>က။ ဘက်တီးရီးယားရောဂါပိုး</p> <p>ခ။ လေစိမ်းတိုက်ခံရခြင်း</p> <p>ဂ။ အာဟာရချို့တဲ့ခြင်း</p> <p>ဃ။ ဆေးလိပ်သောက်ခြင်း၊ ကွမ်းစားခြင်း၊ အရက်သောက်ခြင်း</p> <p>င။ ပူအိုက်သောရာသီဥတု</p> <p>စ။ အလုပ်ပင်ပန်းခြင်း</p> <p>၂။ အဆုတ်တီဘီရောဂါသည် ခြင်္သေ့တစ်ဆင့်ကူးစက်နိုင်သည်။</p> <p>၃။ အဆုတ်တီဘီရောဂါသည်၏ အသက်ရှူလမ်းကြောင်းမှတစ်ဆင့် ကူးစက်နိုင်သည်။</p> <p>၄။ လူတစ်ဦးသည် အဆုတ်တီဘီရောဂါကို အောက်ပါနည်းလမ်းများဖြင့်ရရှိနိုင်သည်။</p> <p>(က) လက်ဆွဲနှုတ်ဆက်ခြင်း</p> <p>(ခ) အဆုတ်တီဘီရောဂါရှိသည့်သူတစ်ဦးမှ ချောင်းဆိုး(သို့) နှာချေသော လေထုထဲမှတစ်ဆင့်</p> <p>(ဂ) ပန်းကန်ခွက်ယောက်များကို အတူသုံးစွဲခြင်းဖြင့်</p> <p>(ဃ) အများသုံးနေရာများရှိ ပစ္စည်းများကိုထိတွေ့ကိုင်တွယ်ခြင်းဖြင့်</p> <p>၅။ ဘီစီဂျီကာကွယ်ဆေးသည် ကလေးငယ်များအား တီဘီရောဂါဖြစ်ပွားခြင်းမှကာကွယ်နိုင်သည်။</p> <p>၆။ အိတ်ချ်အိုင်ဗီရောဂါသည်သည် တီဘီရောဂါဖြစ်နိုင်ချေပိုများသည်။</p>			
<p>ရောဂါလက္ခဏာ၊ စစ်ဆေးရှာဖွေချက်နှင့် ကုသမှု</p> <p>၇။ အဆုတ်မှလွဲ၍ တီဘီရောဂါဖြစ်ပွားနိုင်သည့် နေရာများမှာ</p> <p>(က) အရိုး</p> <p>(ခ) အဆစ်</p> <p>(ဂ) ပြန်ရည်ကြော</p> <p>(ဃ) ဦးနှောက်ဖြစ်သည်။</p> <p>၈။ အောက်ပါအချက်အလက်များသည် တီဘီရောဂါ၏လက္ခဏာများဖြစ်သည်။</p> <p>(က) အဖုအပိမ့်များထွက်ခြင်း</p> <p>(ခ) ၃ပတ်ထက်ကျော်လွန်ပြီးချောင်းဆိုးခြင်း</p> <p>(ဂ) ချောင်းဆိုးသွေးပါဖြစ်ခြင်း</p> <p>(ဃ) ခေါင်းကိုက်ခြင်း</p> <p>(င) ကိုယ်အလေးချိန်ကျဆင်းခြင်း</p> <p>(စ) ခံတွင်းပျက်ခြင်း</p> <p>(ဆ) အဖျားတက်ပြီး ညဘက်တွင်ချွေးထွက်ခြင်း</p> <p>(ဇ) ရင်ဘတ်အောင့်ခြင်း</p> <p>၉။ တီဘီရောဂါရှာဖွေဖော်ထုတ်ခြင်းကို သလိပ်စစ်ဆေးခြင်းဖြင့်လုပ်သည်။</p> <p>၁၀။ ရင်ဘတ်ဓာတ်မှန်များရိုက်ခြင်းသည် တီဘီရောဂါရှာဖွေဖော်ထုတ်ရာတွင် အရေးပါသည်။</p> <p>၁၁။ တီဘီရောဂါသည် အနားယူခြင်းဖြင့်သာ ပျောက်ကင်းနိုင်သည်။ (တီဘီဆေးများသောက်သုံးရန်မလိုပါ)</p> <p>၁၂။ တီဘီဆေးများ အချိန်မှန်သောက်သုံးခြင်းနှင့် ဆေးကုသမှုအပြည့်အဝခံယူခြင်းဖြင့် တီဘီရောဂါကိုကုသနိုင်သည်။</p> <p>၁၃။ တိုင်းရင်းဆေးများသည် တီဘီဆေးထက် ပိုမိုချေးသက်သာပြီးပိုမိုထိရောက်သည်။</p> <p>၁၄။ တီဘီဆေးများသည် မသက်မသာဖြစ်စေပြီး ဘေးထွက်ဆိုးကျိုးများပေးသည်။</p>			

ဂ။ အဆုတ်တီဘီရောဂါအပေါ် သဘောထားများ

ဖော်ပြချက်	သဘောတူ	ကြားနေ	သဘောမတူ
<p>ကူးစက်လွယ်မှု</p> <p>၁။ အဆုတ်တီဘီရောဂါအများဆုံးဖြစ်ပွားနိုင်သည့်သူများမှာ</p> <p> က။ အမျိုးသား</p> <p> ခ။ အမျိုးသမီး</p> <p>၂။ အိတ်ချ်ဒိုင်ဗီ/ အေအိုင်ဒီအက်စ်ရောဂါရှိသူများသည် တီဘီရောဂါအလွယ်တကူကူးစက်ခံရနိုင်သည်။</p> <p>၃။ တီဘီရောဂါသည်နှင့် တရင်းတနီးထိတွေ့ဆက်ဆံသူသည် တီဘီရောဂါရရှိနိုင်သည်။</p> <p>၄။ အာဟာရချို့တဲ့သူများနှင့် ဆင်းရဲနွမ်းပါးသောသူများ တီဘီရောဂါဖြစ်နိုင်ချေပိုများသည်။</p> <p>၅။ တီဘီရောဂါသည် တီဘီရောဂါသည်နှင့်အတူတူအလုပ်လုပ်ခြင်းမှ ကူးစက်ခံရနိုင်သည်။</p> <p>၆။ အဆုတ်တီဘီရောဂါသည်ကို အပယ်ခံအနေနှင့်သတ်မှတ်သင့်သည်။</p> <p>ပိုမိုလွယ်ရာအခြေအနေ</p> <p>၇။ တီဘီရောဂါသည် အန္တရာယ်ကြီးမားပြီး အသက်ဆုံးရှုံးနိုင်သည်။</p> <p>၈။ အချိန်နှောင်းမှကုသလျှင် သေဆုံးနိုင်သည်။</p> <p>၉။ သင်၏အလုပ်ရှင်က သင့်တွင် အဆုတ်တီဘီရောဂါရှိနေသည်ကိုသိလျှင် သင့်အား အလုပ်မှထုတ်ပယ်နိုင်သည်။</p> <p>၁၀။ သင်၏အပေါင်းအသင်းများက သင့်တွင် အဆုတ်တီဘီရောဂါရှိနေသည်ကိုသိလျှင် သင့်အားခွဲခြားဆက်ဆံနိုင်သည်။</p> <p>၁၁။ အကယ်၍ ကျွန်ုပ်တို့တွင် အဆုတ်တီဘီရောဂါရှိလျှင် မိသားစုတွင်းဆက်ဆံရေးကို အလွန်အမင်းထိခိုက်နိုင်သည်။</p> <p>ကြိုတင်ကာကွယ်ခြင်း၏အကျိုးကျေးဇူးများ</p> <p>၁၂။ အကယ်၍ သင်သည် လေဝင်လေထွက်ကောင်းမွန်သောအိမ်တစ်အိမ်တွင် နေထိုင်လျှင် တီဘီရောဂါဖြစ်ပွားခြင်းမှ ကာကွယ်နိုင်သည်။</p> <p>၁၃။ အကယ်၍ တီဘီရောဂါပိုးရှိနေသူတစ်ယောက်သည် သင့်ဘေးနားတွင်ချောင်းဆိုး (သို့) နှာချေပါက သင်၏ပါးစပ်နှင့်နှာခေါင်းကို အုပ်ထားခြင်းဖြင့် တီဘီရောဂါဖြစ်ပွားခြင်းမှကာကွယ်နိုင်သည်။</p> <p>၁၄။ အကယ်၍ သင့်တွင် တီဘီရောဂါရှိနေလျှင် အဆုတ်တီဘီဆေးဝါးများကိုသောက်သုံးရန် အရေးကြီးသည်။</p> <p>၁၅။ အကယ်၍ သင့်တွင် အဆုတ်တီဘီရောဂါ၏လက္ခဏာများရှိသည်ဟု သံသယရှိလျှင် ချက်ချင်းအကြံဉာဏ်ရယူသင့်သည်။</p> <p>အခက်အခဲအတာအခါများ</p> <p>၁၆။ သင်သည်အာဟာရပြည့်ဝစွာ စားသုံးလိုသော်လည်း အလွန်ဆင်းရဲသည်။ ဇီတာမင် အာဟာရများ ပြည့်ဝသော အစားအစာ</p> <p>၁၇။ တီဘီရောဂါမှကာကွယ်နိုင်ရန် လေဝင်လေထွက်ကောင်းမွန်သောအိမ်တစ်အိမ်တွင် နေထိုင်လိုသော်လည်း နေထိုင်နိုင်သည့်အခြေအနေမရှိပါ။</p> <p>၁၈။ တီဘီရောဂါမှကာကွယ်နိုင်ရန် တီဘီရောဂါသည်များနှင့် အလုပ်အတူတူလုပ်ခြင်းမှ မရှောင်လွှဲနိုင်ပါ။</p> <p>၁၉။ တီဘီရောဂါမှကာကွယ်နိုင်ရန် လူထုထပ်သောနေရာတွင်နေခြင်းမှ မရှောင်လွှဲနိုင်ပါ။</p> <p>၂၀။ ဒေသဆိုင်ရာအာဏာပိုင်များကြောင့် သင်နေမကောင်းဖြစ်လျှင်ဖြစ်ချင်း ဆေးကုသမှုမခံယူနိုင်ပါ။</p> <p>၂၁။ ဘာသာစကားအခက်အခဲကြောင့် သင်နေမကောင်းဖြစ်လျှင်ဖြစ်ချင်း ဆေးကုသမှုမခံယူနိုင်ပါ။</p> <p>၂၂။ ဆရာဝန်က သင့်ထံတွင် အဆုတ်/ အခြားခန္ဓာကိုယ်အစိတ်အပိုင်းများတွင် မှားယွင်းမှုကို တွေ့ရှိမည်ရှိသောကြောင့် ဆေးရုံ/ဆေးခန်းသို့မသွားလိုပါ။</p>			

(ဃ) တီဘီရောဂါကူးစက်ခံခြင်းမှကာကွယ်သည့်အမှုအကျင့်များ

ဖော်ပြချက်	အမြဲ	တစ်ခါတစ်ရံ	မကျင့်သုံးပါ
<p>၁။ သင်သည် တီဘီရောဂါဖြစ်ခြင်းမှကာကွယ်နိုင်ရန် အာဟာရမျှတစွာစားသုံးသည်။ ဗီတာမင် အာဟာရများ ပြည့်ဝသော အစားအစာ (ဥပမာ- ဟင်းသီးဟင်းရွက်၊ အသား၊ ငါးများကို မျှတစွာစားသုံးခြင်း)</p> <p>၂။ တစ်နှစ်အောက်ငယ်သောကလေးများအား ဘီစီဂျီဆေးထိုးရန် သင့်အနေဖြင့် တိုက်တွန်းမည်ဖြစ်သည်။</p> <p>၃။ သင်သည် ကျန်းမာရေးကျွမ်းကျင်ပညာရှင်များမှ ကျန်းမာရေးစောင့်ရှောက်မှုများခံယူသည်။</p> <p>၄။ သင့်တွင် တီဘီရောဂါလက္ခဏာရှိသည်ဟု သံသယဖြစ်သည့်အခါတိုင်း ဆေးစစ်မှုများခံယူသည်။</p> <p>၅။ သင်၏အိမ်ကို လေဝင်လေထွက်ကောင်းစေရန်နှင့် နေရောင်ခြည်ရရှိရန် လုပ်ဆောင်ထိန်းသိမ်းထားသည်။</p> <p>၆။ တီဘီရောဂါသည်များနှင့် နီးနီးကပ်ကပ်မနေပါ။</p> <p>၇။ တီဘီနှင့် အိတ်ချ်အိုင်ဗွီ/အေအိုင်ဒီအက်စ်ရောဂါများနှင့်ပတ်သက်သည့် ကျန်းမာရေးသတင်းများကို နားထောင်ဖတ်ရှုသည်။</p> <p>၈။ အဆုတ်တီဘီရောဂါကူးစက်ခံခြင်းမှကာကွယ်ရန် ဤအမှုအကျင့်များကို ကျင့်သုံးသည်။ (က) အဆုတ်တီဘီရောဂါသည်နှင့် ခွက်အတူတူသုံးစွဲခြင်းမှ ရှောင်ရှားသည်။ (ခ) တခြားသူများရှေ့တွင် ချောင်းဆိုး/နာချေခြင်းမပြုပါ။ (ဂ) နေရာတိုင်းတွင် တံတွေးထွေးခြင်းမပြုပါ။ (ဃ) တီဘီရောဂါသည်အတွက် သီးသန့်အခန်းသုံးစွဲသည်။ (င) စောစီးစွာ ဆေးကုသမှုခံယူပါ။</p>			

“ဤသုတေသနလုပ်ငန်းတွင်ပါဝင်မှုအတွက်ကျေးဇူးတင်ပါသည်”

BIOGRAPHY

Name Sittipong SREECHAT

Gender Male

Nationality Thai

Birth date 19th August, 1983

Marital status Single

Contact details:
Email ssreechat@gmail.com

Profession: Medical Laboratory Technologist
Project Assistant – Global Fund

Educational Background:

Year 2002 - 2007 Bachelor degree in Medical Technology,
Chulalongkorn University, Bangkok, Thailand

Work Experience:

April 2007 – Present: International Organization for Migration (Thailand)

Position: Microscopy Internal/External Quality Assessment Program Coordinator
for IOM Thailand Laboratory Service Network