PATIENT'S DELAY IN TUBERCULOSIS CENTER TREATMENT AMONG MYANMAR MIGRANTS, SAMUTSAKHON PROVINCE, THAILAND

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ABSTRACT

A cross-sectional study on patient's delay in a tuberculosis center treatment, among Myanmar migrants in SamutSakhon Province was conducted during January-February, 2005. Specific objectives were to identify the period of patient's delay, to describe predisposing factors, enabling and need factors to TB center treatment and to examine the relationship these factors and patient's delay. Purposively selected study areas, 157 TB patients for the sample.Interview questionnaire, MiniTab and Chi-square tests were used.

. Patient's delay was 71.34% of the respondents, 29.3% short delay, 42% long delay. 73% of patient with poor knowledge were the mostly delayed. No predisposing and socio-demographic factors were significant. Of enabling factors, availability of information from the hospital doctors and staff was significantly related to patient's delay p=0.04. Among the need factors, 80% of patients' perception with a high level of severity of TB, 78% of perceived with high level of treatment benefit had delayed with p = 0.01, 0.03. Reverse findings in this study can be explained by prior infection before migration and wait for health insurance card.Among symptomatic patients,nearly 75% were delayed with p = 0.001. Main reasons to come to TB center were "detected by labor registration" at 65%. About 75% of these were delayed with p = 0.014. Reasons for delay, "wait for insurance card" was at 53%. All significant values were weak in relationship.

The results suggest a health education plan, a workplace TB control program and peer education are needed for migrants. A shortened period for issuing an health insurance card, strengthened existing TB surveillance system, proper channels for labor migration between Thailand and Myanmar are recommended.A similar study in a different location, system delay, total delay, compliance, defaulter, and qualitative studies at workplace are needed.

KEY WORDS: PREDISPOSING FACTORS / ENABLING FACTORS / NEED FACTORS / PATIENT'S DELAY / MIGRANT TB PATIENTS

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LIST OF ABBREVIATIONS

DOTS	:	Direct Observed Treatment, Short Course
HIV	:	Human Immuno-deficiency Virus
AIDS	:	Acquired Immune Deficiency Syndrome
TB	:	Tuberculosis
MDR TB	:	Multiple Drug Resistant TB
WHO	:	World Health Organization
CBO	:	Community Based Organization
MOPH	:	Ministry of Public Health (Thailand)
BCG	:	Bacillus Calmette Guiren (TB vaccine)
NGO	:	Non-Government Organization
IUALD	:	International Union against TB and Lung Association
HBC	:	High Burden Countries
UNHCR	:	United Nation High Commissioner for Refugee
NTP	:	National TB programme

CHAPTER 1
INTRODUCTION

1.1 Rationale and justification of the study

The global tuberculosis epidemic has reached an unprecedented scale, 8.5 million new cases and 2 million deaths annually.[1] Tuberculosis is the leading cause of death from a single infectious disease, accounting for over a quarter of avoidable deaths among adults. (Shimao,1999) It has been estimated that between 19% and 43% of the world population is infected with Mycobacterium tuberculosis. The smear positive pulmonary TB cases play the major role in the transmission of this infection.[2] All of them should access to effective care for curative as well as preventive aspects. In 1999, World Health Assembly resolution proposed that all countries adopt two TB control targets for the year 2000, later became 2005 target, as to detect 70% of smear positive cases, to treat successfully 85% of such cases. [3] According to Table 1, there is a need to improved TB control in twenty two High Burden Countries (H.B.Cs) and sought solution to constraints through a wide consultative process. In 2003, global TB control became expanding control activities across all health care providers and other stakeholders within the health sectors as well as broader range in sectors beyond health. Moreover, regional and national stop TB partnerships formulated the global perspective into country level action and accelerated to reach their target. Progress in TB control has contributed a integral part of country health status and poverty reduction. WHO has encouraged TB control as up to individual level, set up 2004 World TB day slogan;“ every breath count, stop TB now.”[1]

On the other hand, TB has been contributed to the major health problems encountered by human race because of the following factors

1. Large portions of young adults are the highest risk group in the population.
2. Increasing the migration of populations due to economical and political constraints

3. The rapid spread of HIV epidemic, a condition that facilitates the spread of TB.
4. Inadequate efforts made in the past TB controlling in the region.[4]

Table 1 Incidence of TB estimated in 2002

Estimated incidence of TB, 2002

		NUMBER ESTIMATED				
		ALL CASES		SMEAR-POSITIVE CASES		
	POPULATION (1000s)	NUMBER (1000s)	RATE PER 100 000 POP	NUMBER (1000s)	RATE PER 100 000 POP	CUMULATIVE INCIDENCE (%) (REGIONAL PROPORTION OF GLOBAL TOTAL)
1 India	1 049 549	1 761	168	787	75	20
2 China	1 294 867	1 459	113	656	51	37
3 Indonesia	217 131	557	256	250	115	43
4 Nigeria	120 911	368	304	159	132	47
5 Bangladesh	143 809	318	221	143	99	51
6 Pakistan	149 911	272	181	122	81	54
7 Ethiopia	68 961	255	370	110	159	57
8 Philippines	78 580	251	320	113	144	60
9 South Africa	44 759	250	558	102	227	62
10 DR Congo	51 201	196	383	85	167	65
11 Russian Federation	144 082	182	126	81	56	67
12 Kenya	31 540	170	540	70	223	69
13 Viet Nam	80 278	155	192	69	86	70
14 UR Tanzania	36 276	132	363	56	155	72
15 Brazil	176 257	110	62	49	28	73
16 Uganda	25 004	94	377	41	164	74
17 Zimbabwe	12 835	88	683	35	271	75
18 Mozambique	18 537	81	436	34	182	76
19 Thailand	62 193	80	128	35	57	77
20 Afghanistan	22 930	76	333	34	150	78
21 Cambodia	13 810	76	549	33	242	79
22 Myanmar	48 852	75	154	33	68	80
Total, high-burden countries	**3 892 274**	**7 005**	**180**	**3100**	**80**	**80**
AFR	672 238	2 354	350	1 000	149	26
AMR	856 916	370	43	165	19	4.2
EMR	502 824	622	124	279	55	7.2
EUR	877 887	472	54	211	24	5.4
SEAR	1 590 833	2 890	182	1 294	81	33
WPR	1 718 314	2 090	122	939	55	24
Global total	**6 219 011**	**8 797**	**141**	**3 887**	**63**	**100**

Source; Global TB control: WHO Report, 2004 Table 6;pg 22

Therefore TB still remain as an important public health problem, even despite of technological advance and control programme. Especially, TB stands as one of the infectious diseases, plays as a leading cause of death among adults in developing countries. Even in some industrialized countries also have recently seen the reemergence of this disease.[5] TB kills more women than all causes of maternal mortality than all other causes put together. More than one million women died needlessly from TB every year. If TB is left unchecked in the next 20 years, almost one billion people will become newly infected, 200 million will develop the diseases , and 35 million will die of it. [6] TB hampers economic development by reducing workforces, diminishing productivity and cutting household income by third. Interrupted or improper treatment of the disease can lead to drug resistance. This MDR-TB require regimens 100-1400 time more expensive than DOTS. [7] Consequently ,WHO (1998a) estimates that by the end of century, HIV infection will cause an additional 1.5 million cases of TB annually .Under conservative assumptions ,Murry et al.(1993) forecast a 10% increase in deaths from TB between 1990 and 2015. [8]

Half of all new global cases of TB (4.5 million of 9 million) each years are in six Asian countries – Bangladesh, China, India , Indonesia ,Pakistan and the Philippine.[6] Majority of TB disease and death occurs 75% among them active segments population (15-54) years of age, working age groups(murry, 1996,p212).

Regionally, when focus on previously stated **four** main reasons for TB as a major public health problems ; **Second** one is also an important factor for border areas. Population movement in Thailand is very common, especially at Thailand and Myanmar border. This area is populated by approximately 110,000 displaced persons registered in UNHCR; 109,000 registered migrant with work permit; 6.7 million Thais and an estimated 300,000 to 500,000 unregistered migrant. This latter group creates the largest public health problems , as reports indicate many of them do not have access to health services, have increased morbidity and many public health risks, such as low immunization rate. Some members of the at risk population are highly mobile, moving back and forth across the border. This raises increased concerns over the transmission of disease, such as multi-drug resistant TB and drug- resistant malaria. About the TB situation, 1997-2002 survey in border area has found that border district

hospitals had registered Thai and alien cases more than 50-100 cases, twice the cases of non- border district hospitals. Non- resident cases had unattached rate of more than 50% . The TB drug resistant surveillance, rate of MDR is more than five time of country coverage. [9] In resource-poor areas , inconsistent drug supply and weak TB control infracture can lead to a vicious cycle of inadequate treatment, the generation of drug resistance TB and transmission of resistant strains. [10] Similarly, TB control programme has faced the problems for providing accessible care for migrants with TB and ensuring that patient with TB, who migrate, can complete the treatment. From the point of public health, the development of strategies to tackle the issue of trans-border migration of people with TB is an important issue for national TB control programme and necessitates joint intercountry effort that should be work across the political boundaries.[11]

Ratchaburi , fourth regional TB zone is west of the central part of Thailand, has long border with Myanmar and seven provinces are included in this TB zone. As a regional level of TB zone ,TB new smear positive infection case (rate per 100,000 Population)are still high about 48 to 55.57 in year 2000 to 2003. In 2002, DOTS has been expend to five agencies which were not under MOPH as in private sector with Social Security Service and 30 bahts Project. But two of five agencies had quit from 30 baht Project and could not evaluated DOTS, the remaining three hospital (Sivichai V, Samutsakhon Hospital ,etc) have been evaluated and still under support of Office of Disease Prevention and Control ,Region 4. In spite of policy ,strategies and target of TB control, newly TB infected cases in five year period (1999-2003) found that most patient were man and age between 25-34 year had highest infection rates. Moreover, twelve TB cases with age under 15 years were found and it showed that spreading of TB is increase in community . (Ratchaburi regional TB zone Report, 2003)

SamutSakhon is a one of provinces in this zone and TB prevalence is still high about 73.85 in 2003. It was a highest TB infected rate in this region, This province is only 30 km from Bangkok, has an estimated number of 200,000 Myanmar workers. Which is nearly two thirds of the total population 390,699 of SamutSakhon. They were working as sea food factory workers, agricultural workers and construction workers and fishermen. The number of migrants workers in this area is increasing

every day and among them infectious diseases like TB, malaria, filariasis, diarrhea, and HIV/AIDS are becoming health problems (Samut Sakhon Provincial Health Office Report , 1997). Myanmar migrants TB 83 patients had treated in Samutsakhon General Hospital and 290 TB patients had treated at Private Hospital, in period of 2003-2004. This was higher than that of previous years with only 171 TB patients.

Due to their mobile nature , it may also prone to get high defaulter rate in 2004 like as other province (Mae Sot 35.6%, etc)as well as high drug resistance rate (Mae Sot, 41.4%)[12] There is a lack of information pertaining to population size, type of their life style, related factors of knowledge of TB. These information gaps are due to lack of research among mobile population, political conditions and national focus and so it may lead to hidden or undiagnosed many TB cases among this population. In general, early case detection is really necessary for TB diseases control and prevention aspect and the only measurable and practical indicators for coverage of case detection is measuring about patient delay.

For this reason, many researches may need in order to know more detail information about TB disease among migrant population. This research had done on Myanmar migrants at Samutsakhon as they are vulnerable group and no information about delay factors. No research has been done among Myanmar migrants with this kind of study at this areas ,and also with reason of increasing trend of this devastating disease and migrant population in this area as mentioned before. So this is essential issue to study. This study was focus on predisposing, enabling and need factors related in seeking treatment to TB center.

The finding from this research can fill the information gap on migrants related TB disease prevention and control. The result obtained from this study may give not only useful tool for combating TB occur in migrant population but also for one important point to fighting against regional and border diseases of Myanmar and Thailand.

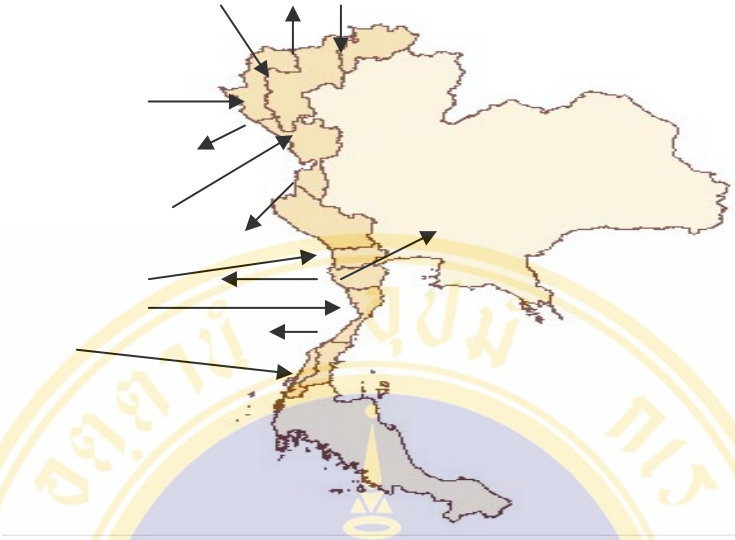

Figure 1 Ten Border Provinces contact with Myanmar

(Tak,Mae Sot, Phro Phra ,Mae Ramat, Tha Song Yang, Umphang, Ranong, Mae Hong Son, Ratchaburi, Kanchannaburi,etc)

1.2 Research Questions

Case- finding and case holding (treatment) are the most basic components data for TB control programme. All the activities should be targeted to improve these two components and the efficacy of the programme could be evaluated only through these data. The ultimate objective of TB control is to cut the chain of infection from infected groups to non-infected groups. Thus, the early detection of TB patient and subsequent appropritate chemotherapy were vital role for achieving the broad objective of control of epidemic , to diminish both the prevalence of infection and incidence of the disease.

The key to make the diagnosis of TB in a timely manner was to suspect the infection in any person with more than two week of sign and symptoms compatible with the disease such as persistant cough with sputum or blood , shortness of breath, low grade fever and also to obtain appropiate specimens for examination. ***Delay to diagnosis and treatment of patients with smear positive pulmonary TB result in increased risk of infection tramission.***[13] The early case dection could speed up recevory time from TB whereas late diagnosis of active patient has been leading the

more damage for them , resulting in high treatment failure rate and more serious complications .It is a source of infection for tramission to family, community, and also one of the contributing factors of the drug resistance.

Therefore, research questions are as follow,

1.What are the period of patients' delay in the study population?

2.What kinds of the factors (predisposing ,enabling and need factors) mainly relate to patient's delay in seeking treatment from TB center among migrant Myanmar TB patients, SamutSakhon Province ?

3.Are there any relationship between those factors and patient's delay?

1.3 Reseach Objectives:

1.3.1 General Objective:

To investigate patient's delay in seeking treatment from TB center among Myanmar migrants TB patients in **SamutSakhon** Province, Thailand.

1.3.2 Specific Objectives

1. To identify the period of patient's delay in seeking TB center treatment among Myanmar migrants TB patients.

2. To describe **Predisposing Factors** (age, gender, marital status, occupation and knowledge), **Enabling Factors** (family income ,education level, accessibility and availability of TB center and treatment.) **Need Factors** (perception about TB severity and benefit of treatment**)** to TB center treatment among Myanmar migrant TB patients **.**

3. To examine the relationship between patient's delay and Predisposing Factors, Enabling Factors and Need Factors to TB center treatment among this study population.

KEY WORDS:

PATIENT'S DELAY, MYANMAR MIGRANT TB PATIENTS,
PREDISPOSING FACTORS, ENABLING FACTORS, NEED FACTORS

1.4 Conceptual Framework

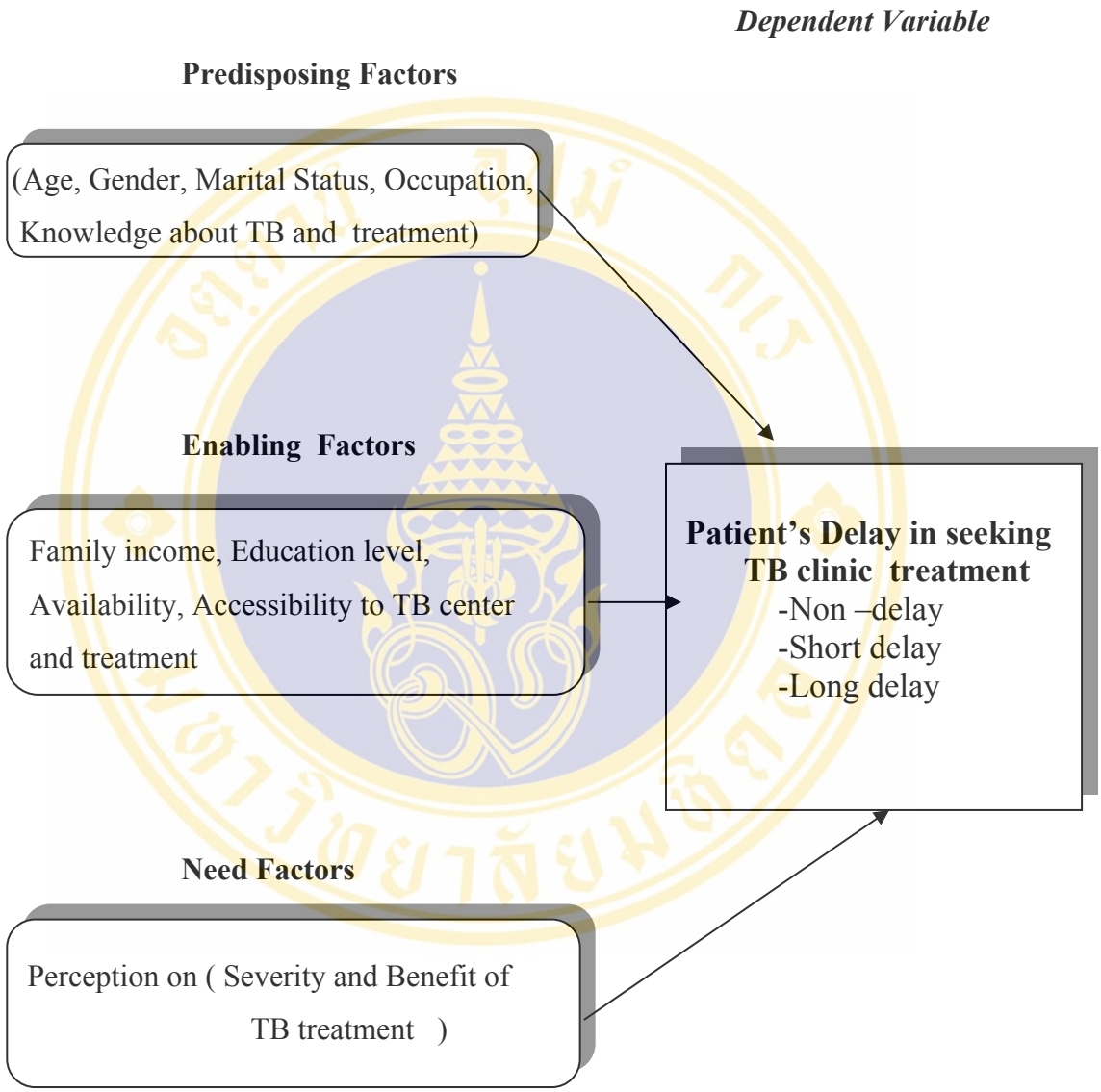

Figure 2 Factors correlating with patient's delay in seeking TB treatment

1.5 Operational Definitions of the variables

Treatment of TB **:**It refers to the first episode of TB treated by Anti-TB treatment provided by TB center of respective hospitals.

Newly Diagnosis TB case :

:It refers to TB patient who has never had treatment for TB or has taken first time anti TB treatment within six months period.

Myanmar migrant TB patients

: It refers to men or women from Myanmar who passed the borders for temporary stay in Thailand due to their occupational reasons. Regardless of their working status (legal/illegal), those adults working age group suffered with TB. They are properly treated with TB center of respective hospitals in SamutSakhon Province.

Knowledge **:** It refers to the patient's ability to correctly recall or get memory about TB with its chain of infectious disease processes (causal agent, reservoir, portal of exist and entry, mode of transmission, susceptible host), as well as TB symptoms, prevention and its treatment.

Availability **:** It refers to the available conditions for TB patient's to get anti TB treatment. It includes the services (nearest TB centers, its services), source of information about TB treatment and TB centers .

Accessibility **:**It refers to whether the service site is ease of getting or convenient for TB patient's obtaining anti TB treatment. In this study , physical, economical and socio-cultural accessibility about TB treatment and TB centers had included .

Perception : It refers to patient's personal belief and way to notice about his or her disease severity and benefits of TB treatment.

Patient's delay : It refers to the time- lapse from the onset of clinical symptoms until first visit to health care facilities in seeking TB center services (diagnosis and anti TB treatment) . In this study,

a period of **up to 30 days** is considered ***non –delay***,
More than 30 days up to 60 days as ***short delay*** and
More than 60 days as ***long delay***.[12]

This cut off point is based on the pathogenesis of TB; it is just because of after 30 days of incubation period, symptoms are clearly manifested. [14][15]This delay is obtained during interview of information about delay to TB treatment.

1.6 Scope and Limitation*:*

This sample group was not representative of the whole Myanmar migrant in Thailand because of purposive sampling to the study groups that represent only near to the northern border, Samut Sakhon province of Thailand. It can not be generalized but it represented for area with similar characteristic pattern.

At the time of survey, migrant TB patient's delay in treatment had only for the past few period, rather than the whole period of longitudinal study, so time interval was the limitation of this study. Even though asking questions for interviews did not face with difficulty due to mother language. But there were some workers who cannot speak Myanmar(some ethnic group) and also did not understand about some of the questions as well as some aspect related to the questionnaires was not able to cover and explain all the variables e.g negative perception questions were difficult to explain to respondents. Thus, the question had to make short and understandable after pretest. As review again on weakness, there may be some interviewer bias on part of the patient's answers because of the patients and doctor power relationship and knowledge gaps. Another bias may be information bias on the part o f the patient's memory of inherently subjective symptoms and delay period as well as respondents only refer to patients who have been successfully diagnosis. Time limitation and searching for target population were also constraint for data collection.These experiences need to avoid for the future study ,that was the limitation of study.

CHAPTER 2
LITERATURE REVIEW

2.1 Global epidemiology and burden of tuberculosis

World Health Organization (WHO) hypothesis-in any developing countries whose annual risk of TB infection is **one**, there will be **50** new cases bacillary per 100,000 population occur yearly . TB is still leading destroyer of lives from past until the present. It impacted on country health status and economic productivities.[16] Despite the fact that the causative organism was discovered more than 100 years ago and highly effective drug, vaccine and reliable diagnosis procedures are available making TB a preventable and curable disease, but TB remains a world wide public health problem. [17] Moreover, emergence of HIV as an accelerator of new TB infections as well as occurrences of multi drug resistance strain. So, burden to fight TB is more complicated and bigger problems.[16]About the HIV positive people are 30 times more likely to get sick with TB once infected, the deadly link between TB and HIV is a major factor, which can contribute to spread of TB. During 1990's an additional 7 million cases of TB are predicted to become of dual HIV/TB association,[18]

WHO projected that, over one million women and 100,000 children will die needlessly from TB and hundred of thousand of children will become orphan of the same year, as many as half of the world's refugees may be infected with TB and over 17,000 of them sick with the disease. Recognizing that TB is one of the most neglected health crisis and that the TB epidemic is out of control in many parts of the world . In 1993, TB was declared by WHO to be a global emergency. [19]

Despite the present chemotherapy era, TB continue to attack millions of people every years with the fact that it is one of the ten leading causes of morbidity and mortality of human being in the past, also present,and in future. World Health Report (2004) has estimated that every diseases will changing in their rank order by measuring of diseases burden for world leading causes since 1990 and also up to 2020.

Review on Table 2 ,TB will still its own seventh rank up to 2020 as base line scenario measured in Disability-Adjusted Life Years(DALYs).

Table 2

Change in Rank Order of Diseases Burden for World Leading Causes(1990-2020)

Diseases Rank in years 1990	Estimated Diseases Rank in 2020 (base line scenario)
1. Lower Respiratory Infection	1.Ischemic Heart Diseases
2.Diarrhoea Diseases	2.Unipolar Major Depression
3.Condition from perinatal period	3.Road Traffic Accident
4.Unipolar Major Depression	4.Cerebrovascular Diseases
5. Ischemic Heart Diseases	5.Chronic Obstructive Pulmonary Diseases
6. Cerebrovascular Diseases	6. . Lower Respiratory Infection
7.TB	7.TB
8.Measles	8.War injuries
9. Road Traffic Accident	9. Diarrhoea Diseases
10.Congenital Abnormalities	10.HIV/AIDS

Source; Global Diseases Burden measured in Disability-Adjusted Life Years(DALYs); World Health Report.2004, vol 1,p375

2.2 Global TB control strategy

Facing the present challenge of the TB resurgence, WHO recommends a global TB control policy package, which represents an organizational framework for the effective utilization of the two existing tool: they are sputum smear microscopy (for diagnosis) and short-course chemotherapy (for treatment), the WHO recommended framework for effective TB control consist of the following essential points: Overall objectives of TB control are; to reduce mortality, morbidity and disease transmission , and to prevent the development of drug resistance. Strategy for TB control is to provide standardized short –course chemotherapy (SCC) under direct observation at least during the initial phase of treatment to, at least, all identified smear-positive TB cases.[13] WHO is working with the governments of the worst effected countries to help them establish effective TB control program. It encourages

these countries to move toward nationwide coverage of TB as soon as possible. Most of these countries began by establishing demonstration and training areas of DOTS., one of the most cost – effective interventions of the 1990s. WHO warned of the emergency of multi-drug resistant, TB strains due to poor management and incorrect conceptual TB programs . Even in developed countries, treatment of multi- drug resistant cases are still difficult, expensive and often fail.

According to the WHO guideline, DOTS is a proven effective strategy of best TB treatment achieving good cure rate .Many scientists, TB specialists, national program managers and also international organization have made effort to find out an effective management on this DOTS strategy. WHO has play a major role to implement this strategy in all of its member countries including Myanmar also Thailand. Awareness about DOTS has wider options depending upon socio-cultural factors, geography, economic status and health infrastructure of country or community.[20]

2.3 Tuberculosis in the Southeast Asia Region

The southeast –Asia region covers about one quarter of the world's population also has nearly 40% of the global burden of TB cases and death are in this region about 95% of regional TB cases are reported from Bangladesh, India ,Myanmar, Thailand. Nearly 60% of AIDS cases develop TB, it is the most common life threatening opportunistic association with HIV..[21] In Table 3, WHO report on 2004,,Southeast-Asia Region: deaths by mortality stratum in region estimates for 2002 showed as follow,

Table 3 2002-Southeast –Asia Region Estimates(death by mortality stratum)

CAUSE	Mortality Stratum (Low child/adult) -000.	Mortality Stratum (High child/adult)-000.
Total Deaths	2191	12466
TB	138	461
HIV/AIDS	59	377
Diarrhoea	41	563
Malaria	12	53
Leprosy	1	2

Source; WHO report 2004, pg121

2.4 TB Situation in Thailand and its control programs

Tuberculosis control program in Thailand was initiated since 1949, the first specialized chest center was established, and later it became TB division. During the early days, vertically set up 13 zonal TB Centers, followed by integration of TB services with existing health facilities. Since 1982, TB centers are set up at all provincial and district hospitals. With a notable success until 1992, after that alarmingly increase TB cases due to high HIV burden of the country. During the past 5 years especially in the areas heavily afflicted by HIV ,i.e. the upper Northern Province ,the average annual increasing rate of new TB cases is 2% .But substantial effort of National Tuberculosis Programme (NTP),jointly conducted by Ministry of Public Health(MOPH) and WHO teams corrected the weakness of previous programme and also strengthened in control strategy. During 1996, 8 demonstration districts with encouraging achievements of 84% smear conversion rate and 80% cure rate. In 1997, efforts have accelerated and expanded the DOTS strategy 218 of 810 districts nationwide were covered. Then , Up to 40% of the country coverage ,i.e. DOTS strategy expanded to 74 provinces and 364 districts by mid 1999. At the end of 2001, coverage was extended to 60% to 80% of population and treatment success rates was over 70%. [22]

Table 4 show that status of DOTS implementation can compared within southeast-Asia region, based on the Millennium Development Goals-Selected Health Indicators,2000;

Table 4 Status of TB and DOTS implementation within Southeast -Asia Region

Member State	TB Prevalence (per 100,000)	TB Mortality rate(100,000)	TB Cases (%) detected under DOTS(2001)	TB Cases(%) Cured under DOTS
Thailand	225	33	59	82
Myanmar	225	18	75	69
India	431	41	23	84
Bangladesh	479	56	26	83

Source; WHO report 2004.

2.5 Burden of TB in Thailand

Approximately one third of the population of the Thailand is infected with TB, nearly 100,000 people suffer from active TB every year including 37,000 who have infectious disease and spread the bacteria to community. [22]On the other hand, TB prevention and control programme have many constraints and challenges as described in table 5.

Table 5 TB high Burden in Thailand(country data)

Thailand Population Total	Cumulative proportion of burden (incidence in 2001)	DOTS Population coverage in 2001	Sputum (+) case detected under DOTS	Success rate under DOTS in 2000:	HIV/AIDS Prevalence(15-49 yrs) 2001
64,265,276	75%	82%	75%	69%	1.8 %
Main Identified Constraints; 1. TB division has no control ,over budget 2. Potential breakdown of monitoring and reporting system.			Challenges in over; 1. How to advocate for TB at provincial level? 2. How to develop TB target for provinces? 3. How to ensure accuracy of reporting in central office ?		

Source; Morbidity and Mortality Cause in all nations ,Committee on TB epidemic, WHO Sept:2003 [1]

Thailand regional variations in TB incidence are considerable due to migration of people from rural areas to cities as well as border migrant people and also another way is HIV epidemic. Table 5 also show that, owing to HIV epidemic ,TB is becoming a significant health problem, also rate of TB-HIV co-infection in the Northern Province rose from 4.1-24.6 (1991 to 2001). Overall for Thailand , the co infection rate has increased from 14.5-31.8(1989 to 2001). Based on WHO's projections, HIV epidemic will effect a 4 % increase in TB patients in each year. Figure 3 showed that, during the past 5 years an average rise of TB in new sputum positive patients were annually about 2%. [23]

HIV and multi-drug resistant TB have also contributed to a high mortality from TB. Approximately 15% of TB patients in the country also have HIV, which

result in high death rate in some regions, particularly in north of Thailand where 40% of TB patients are co infected with HIV . Due to improper use of anti TB drugs in the past ,one in 50 new TB patients already have MDR TB, treatment of MDR this is expensive, toxic and few patients are cured. Failure to effectively implement DOTS will increase the epidemic of MDR TB. That kind of TB are more dangerous than HIV/AIDS cases in the public health point of view . During 1997-98, A report on MDR TB in newly untreated cases revealed a national average of 2.02 %.Also, 6% in such areas with high HIV /AIDS prevalence as in Chiang Rai Province. [23]

From management aspect, NTP supervision plan still need adequate number of trained staffs at all levels and control programme should be targeted at high risk groups(,HIV patients ,border areas, migrants) in way that are appropriate for their socio-economic activities and also that respond to their cultural, geographical and needs[22]

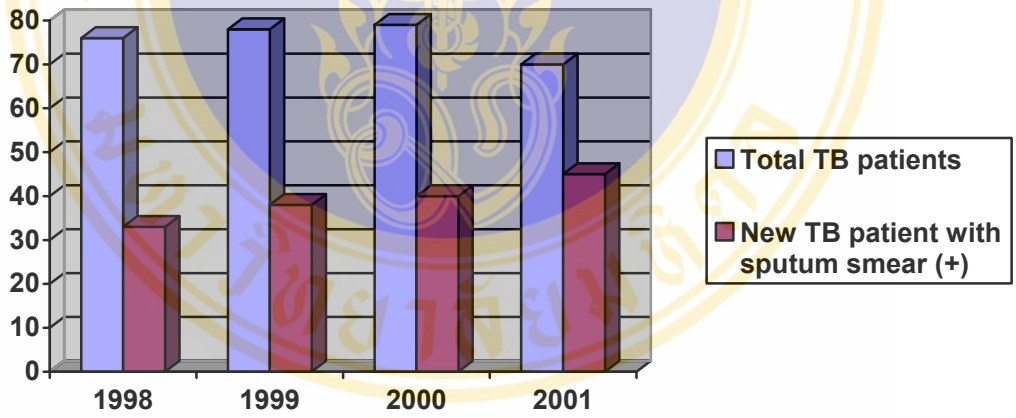

Figure 1 Rate per 100,000 population of newly registrated TB patients in Thailand[23]

2.6 Transnational labors migration and diseases

Migration is an important factor in understanding of epidemiology and control of diseases. Generally ,migrant population as a whole is vulnerable group of engaging in infectious diseases. In Africa, mobility has been demonstrated to be an independent risk factors for the spread of infectious diseases. Extremely mobile group such as travelers, fishermen, traders and migrant workers tend to have high infectious disease prevalence. In Asia , similar association between population mobility and vulnerability to infectious diseases. Also in many industrialized countries, at least one

half of TB cases are among foreign-born people. In US , nearly 40% of TB cases is among those people. Currently the number of refugees and displaced people in the world is also increasing and then untreated TB spreads quickly in crowded refugee camps and shelters. It is difficult to treat mobile population, as treatment takes at least six months. As many as 50% of the world's refugee may be infected with TB ,as they move ,they may spread TB. Other displaced people such as homeless people in industrialized countries are also at risk . In 1995, approximately 30% of San Francisco's homeless population and 25% of London's homeless were reported to be infected with TB. These figures are higher than compare to overall prevalence of 7% in US and 13 % in UK.[22]

As a result of higher trans national labors immigration, especially along the border areas, micro organisms and parasites also move with these travelers and so disease distribution is rising , such as malaria ,diarrhea ,HIV/AIDS ,Polio and anthrax, including re-emerging disease, TB, filariasis. [23] The result from the movement of disease people back and forth across the border lead to develop and spread of drug resistant diseases, and also proliferation of carriers of diseases. Moreover , migrant usually belong to the poorest sections of the society they migrate from. On arrival in the host country , they again join the most disadvantaged socio-economic section of society. Thus, migrant have a tenuous existence wherever they exist, often inhabiting the poorer, congested areas of citifies such as slums or squatter camps. The vast majority of inhabitants live in grossly over crowed and unhygienic conditions, with poor sanitation facilities and no ready access to safe water supply. Such living condition are ideal breeding grounds for a host of communicable diseases, especially TB .At the same time , the inhabitants invariably have limited access to health care. The migrant may also face cultural, linguistic or legal barriers in seeking and obtaining health care. Migrants ,who have families back home that are totally dependent on them, face intense financial, psychological and physical stress. Often-times, the work that they are obliged to do may be illegal or dangerous to mental and physical health . Many migrant with TB who are often on the move in search of work , face additional problems in accessing treatments for TB. They have difficulty in being able to accept and adhere to daily or intermittent DOTS. When they cross a national border, they may face differing drug regimens used in that country. Irregularity, extensive

treatment interruption, and frequent changes of regimen add significantly to the risk that the migrant patient may not be cured and may develop drug resistant TB.[11]

Growth of population , intensification of agriculture ,industrial development, deforestation, unemployment and few other factors resulted in migration in countries of Southeast-Asia. [24] Currently, there is a far greatest transnational labors migration in Thailand ,Thai labors force is shifted to work oversea. On the contrary alien labors forces influx into Thailand, especially from the neighboring countries such as china ,lao ,Cambodia and Myanmar. Myanmar is one of the country touched with very long range border to Thailand .Population migration and movements are very common in those border areas. There are a large number of alien workers immigrating into Thailand both legally and illegally for social, economic and political reasons. Million of people from Myanmar have migrated into neighboring countries over the past decade, this exodus represents one of the largest migration flows in Southeast Asia.[25]

The push factors like economic hardship move them to a higher pay country (labor shortage) like Thailand which had a history of dramatic economic success. Most of the Thai Business run on cheap labor, such as logging companies and construction companies (Asia watch, 1993).According to the news from Bangkok Post(September 13,1992) 99 % of all business in Ranong involved border trade with Myanmar and or depend on Myanmar Labor. Even with the sensitive nature of illegal migration, many of the nation's economies are irrevocably linked to cheap labor from neighboring countries. The daily wage paid to Myanmar workers in Thailand is ten time higher than that of Myanmar so they recruit more workers (Chantavanich and Risser ,1995).They are brought to different parts of Thailand by agents and works as labor workers. Tachilek-Mae Sai, Myawaddy –MaeSot, Kyathaung –Ranong are the main border crossing points as they are official route but more or less who arrive in Thailand use secret jungle paths.(Image Asia, 1995). The majority of those where an estimate two million people from Myanmar work in" 3-D jobs"(dangerous, dirty ,difficult).[25]

Nowadays an increasing number of migrant from neighboring countries move to Thailand. The vast majority are not allowed to stay legally in destination and the population was approximately 334,000 in 1994. But it is increasing every day and

according to Table 6 showed that the provinces with high figures of illegal alien worker include Ranong, Tak and Samut Sakorn where 70,000-140,000 alien workers are estimated to reside.[23]

Table 6 Estimated and Surveyed Number of Migrantts and illegal labour**.**

Year of survey/agency	Number of migrant	Number of Myanmar workers
1998/Ranong	70,079	70,079
1999/Tak	83,200	83,200
2000/Samut sakorn	143,892	Not estimated

Source; Krittaya Archavanichkul et al, 2000.

Generally, Thailand has estimated 970,903 illegal alien laborers. In this amount , at least 775,000 workers are from Myanmar. As a border disease control programme, border health office arranged good mission and strong goals. The office has set up "**Border Health and Environmental Threats Initiative''**. This project can identify and assess threats to national health and environmental security.[9]

At SamutSakhon Province, as the part of health insurance system ,migrant worker were classified with four types for medical checked up and overall insurance money was 1900 bahts per person per year. There was some agreements between employers and workers for this expense. There were four steps in medical check up including general medical examination with urine analysis, chest X-ray, and blood tests. During medical check up, communicable diseases(TB, Leprosy, Syphilis , Filariasis, etc) screenings were also done and had Type 1 migrant group (Normal result) 82156 and Type 2 migrant group (pass but under disease control) 1176 in November ,2004 Survey, SamutSakhon.

After medical check up, migrant workers have to waited heath insurance cards and infected workers were notified by provincial labor registrations directly to employers. Then provincial labor office issued work permit 77,057 and health insurance card 75,687 in 2004. From the work place, health insurance cards with infected workers were referred to respective insurance hospital and they got in patient or out patient services under benefit of 30 bahts scheme .(Raks Thai Survey, 2004)

2.7 Review of theoretical model used :

Health Belief , Illness Behavior and Help-Seeking Model

Since the Health Belief Model has been rarely utilized in research on illness behavior, its applicability will be viewed largely by inference. Studies were examined in terms of what beliefs have been related to seeking care, what factors seen to be represented by these belief and what related or contrasting variables were explored.

A major problem in studying illness behavior relates to the occurrence of symptoms and interpretation, the basic events on which behavioral decisions made. It has been pointed out that symptoms vary greatly in their clarity as cue, that they are subject to substantial situational influences in meaning and recognition of symptom is highly influenced by learned patterns of behaviors. Given the transient nature of symptom experience ,it is difficult to investigate what happens when symptoms occur ,or the nature of the events that are interpreted.[26]

Illness behavior is the activity under taken by a person who feels ill for the purpose of defining that illness and seeking relief from it (Kasaland Cobb 1966). As David Mechanic (1995:1208) explains : " Illness behavior refers to the varying ways individuals respond to bodily indications, how they monitor internal states, define and interpret symptoms, make attributions ,take remedial actions and utilize various source of informal and formal care ." Some people recognize particular physical symptoms such as pain, a high fever, or nausea and seek out a physician for treatment. Other with similar symptoms may attempt self –medication or dismiss the symptoms as not needing attention.[27]

So Health belief model and behavior related to chronic illness (Becker / Fabrega):they spelled out for purpose of defining the scope of following areas.

(1)Seeking medical attention in the presence of symptoms especially referral behaviors(new sign and symptoms revealed at examinations) and delay.

(2)Compliance with medical regime.

(3)Stay in treatment.

(4) Modification of life style habits to reduce risk. [26]

Health service researchers have made many attempts to explain health behavior in relation to the utilization of health services. Health service utilization is an area of interest for many different disciplines. Thus, many approaches and methodologies for the study on health service utilization have been developed by researchers & practitioners in the field of sociology, social psychology, economic, medicine, and other health related areas but there has been no definitive conclusion about which factors or variables can predict health behaviors.[28]

Mechanic (1978:268-269) had formulated a general theory of help-seeking since his initial work with Volkart in the early 1960s. He suggested that whether or not a person will seek medical care is based on ten determinants (1) visibility and recognition of symptoms ;(2) the extent to which symptoms are perceived as dangerous;(3)the extent to which symptoms disrupt family, work and other social activities; (4) the frequency and persistent of the symptoms;(5)amount of tolerance for the symptoms;(6) available information ,knowledge, and cultural assumptions;(7) basic needs that need to denial; (8) other needs competing with illness responses; (9) competing interpretations that can be given to the symptoms once they are recognized; and (10) availability of treatment resources, physical proximity, and psychological and financial costs of taking action. In addition to describing these ten determinants, he explained that they operate at two distinct levels: other define and self define. Other define level is the process by which other people attempt to define an individual's symptoms as illness and call those symptoms to the attention of that person. Self define is where the individual defines his or her own symptoms. These determinants and two levels supposedly interact to influence a person to seek or not seek help for a health problems.[29] Andreson and Bartkus represent a much more restricted formulation: accounting for choice of alternatives once a decision is made to seek care. Predictors include the appraisal of alternatives, perception of symptoms, a series of socio demographic factors that condition the other variables and ability to pay. Symptom perception include threat. Adequacy related to value of action, and meaning of need is unclear. figure 4 show that this model has health belief, which are part of the set of **predisposition** to use health services and include attitude toward health services, toward physicians, toward health insurance **,** knowledge of disease. In health

belief model terms, these seem to represent a general perception of the medical care. This model was applied to family use of services, even though a number of variables are individual ones.[26]

A major model of "**Help-Seeking for Medical Care**" is that developed by Andersen and his associates (1975).This model consist of **predisposing ,enabling** and **need** components. Which describe a person's decision to use health services and the volume of service received.[27]

The **predisposing component** represent the predisposition of individual to use services, include those variables that describe the "propensity" of individuals to use health services. These properties exist prior to the onset of illness episodes and are classified into **threes** groups: *socio demographic variables* (age, gender) *social structure*(occupation, ethnicity) and *Health belief* (attitude, values and knowledge about health and health care services).

The **enabling component** represent his or her ability to secure services .Even through the individual may be predisposed to use services, he or she cannot make use of them unless he or she is able to use them. An individual's ability to use health services depends on the resources of his or her family factors(*family income ,place of residence , education)*community factors(*availability of services,* health insurance coverage) and Ease of getting to care(*accessibility* to a regular source of care in which personal or family represent means and know- how to get to those services and make use of them.)If there are sufficient family and community resources to enable the individual to use health services ,then the individual will be more likely to use those services. Finally in the present of appropriate levels of the predisposing and enabling characteristics, the individual must perceives some need(such as an illness),perceived threat or perceived benefit in order to initiate health service utilization. This need has two distinct categories (1)*perceived need by individual* and (2) evaluated need by the delivery system.[28]

The **need component** represent how people view their own general health and functional state, as well as how they experience symptoms of illness ,pain and worries about their health. Evaluated need also means professional judgment about

people's health status and their need for medical care. [29] There are six common factors for Health Care Seeking Behavior, such as (1) Accessibility of health care.(2) Evaluation of / attitudes toward health care. (3)Perception of symptoms and threat of disease.(4)Social network characteristics.(5)Knowledge about disease and (6) Demographic characteristics {Cummings ; Becker ;and Maile,1980}

It should be noted that Anderson's model is a prediction model , a major purpose of which is to maximize that amount of variance explained. Regardless of why certain variables predict as they do. Prediction model provide useful insight by predicting level of utilization and assisting researchers in describing the pattern they observe, but such model in themselves often do not explain why the process is occurring. They explain only what is occurring. [27]

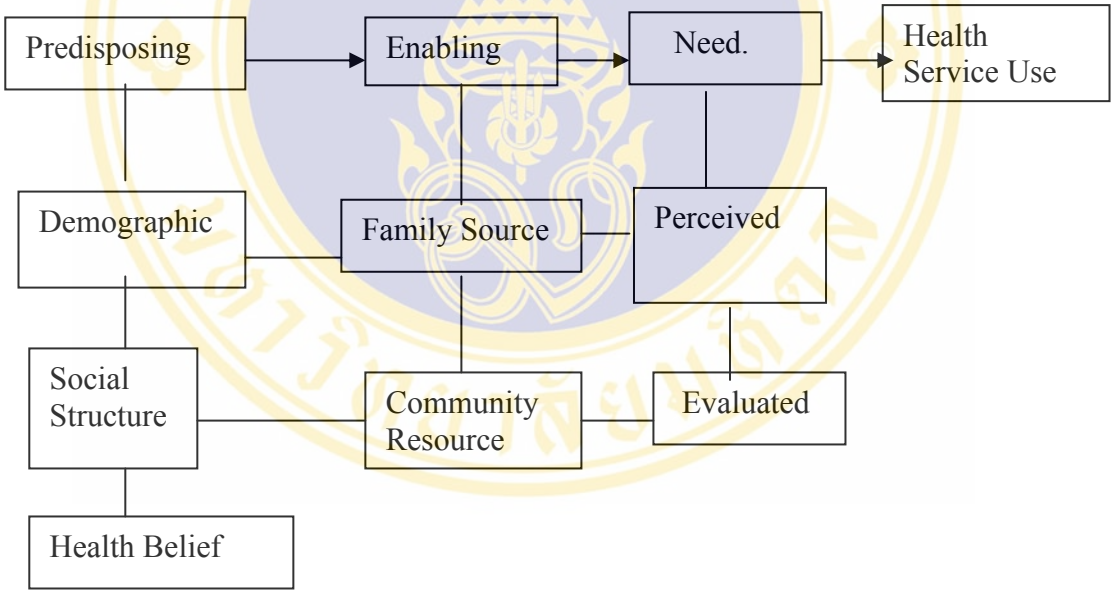

Figure 4 The Behavioral Model of Health Service Use.Source: R.Anderson, et al . Equity for access to medical Care.(Cambridge ,Mass Ballinger Publicating Company,1975)P.5

2.8 Review about variables

2.8.1 Socio-Demographic factors

Individual behavior might be explained as a function of the characteristic of the individual himself .Socio-demographic factors such as age, gender, marital status, income, education ,occupation and ethnicity etc are the indirect determinants. Demographic and individual difference characteristic all influence the decision to use health services.[30] **Age** is the variable in predisposing factors which play a role in health care seeking , because the distribution of different groups of age have a different distribution of illness or suffering so the influence of age to the frequency of seeking care or use of health service would be different**. Gender** is also determine used of health service ,female used of health services is greater than male, female may more sensitive to bodily dysfunction especially minor one than male. Female report pain earlier and experience temperature changes more rapidly.[31] Generally people with low social class tend to underutilized health services because of financial cost and or culture of poverty and system barriers.Culture of poverty explaination is derived from attitudes and norms of poor peoples where they more willing to ignore or not perceive that they are susceptible .They must continue to function in order to meet the demands of survival **low–income patient** in public health systems.Confronted a lack of preventive examnations, high charged for services,long waiting time and relatively poor patient-physicians relationship.[27] **Occupation** is also a predisposing factors ,different patient's employment can be related to the level of disease sufferings. E.A.Suchman's study(1965a)investigation of the extent of belief in and acceptance of modern medicine among several **ethnic groups**.It sought and belived that interplay of ethnic group relationships with an individual's personal orientation toward medicine affected his or her health–seeking behaviours. The highest degree of resistance to using medical services in a lay–referral structure is found in lower–class neighbourhoods characterized by strong ethnic identification and extended family relationship.The decision to seek out a physician is based not just on professional standards of appropriate illness behavior but also on lay norms ,and the two may be conflit.[27] Previous study noted that the **marital status** is also important one,the longer delay among the widowed or seprated just next to the unmarried (with long delay 41.1% beyond one month),partly due to there is nobody

to share their problems with them(.Zola ,1978) ,view on this as “sanctioning”,that is ,one individual takes primary responsibility for the decision to seek medical aid for some one else (the patient). The role of **education** in healthcare seeking behaviours was explained in many studies .One possible explanation was that the more educated people are more conscious of diseases and illnes and willing to seek medical care more promptly.This prompt respone might be partly responsible for the higher frequency of demand. Anderson,1978 found that education level had two relative small effect on health care utilization, which at the first sight appeared to be contradictory.First a direct effect was found ,showing that higher educationed individuals were making more use of health service . Second , an indirect effect was found with higher education leading to less illness and fewer physicians’ visit. More recent study revealed that lower education appear to be more use of health services for diagnosis and treatment,while hieher education appears to be related to preventive service or promotions ,such as dental service and screening programmes.[32]

2.8.2 Knowledge

Knowledge about health is probably necessary before a conscious personal health action occur. For instance ,the lack of knowledge about health may limit people understanding of benefit of health service .So the role of knowledge about their disease is an important role in health seeking behaviors. In this study it refers to the patient’s ability to recall or knowing about etiology of disease, chain of infectious processes, symptoms, prevention and treatment of TB.

2.8.3 Availability

Foster and Anderson point out that a use of existing medical service is often not a result of indigenous belief to western medicine but due to cost and availability of the services. In this study refers to the condition access for TB patient’s to get health care services as proper anti TB diagnosis and treatment. It includes the available resources of services such as nearest TB centers, source of information about TB treatment and TB centers.[33]

2.8.4 Accessibility of Health Services

Accessibility in a number or proportion of given population that can be expected to use a specified facility services. Certain barriers to access to the health services including **Physical(** distance ,travel time , mean of transport **) , Economic** (travel cost , medical cost**) Social and cultural (** cost or languages**)barriers** are still existing in every community. The commonly examined factors included are barriers in socio cultural , that shapes the values, belief and attitude. Barrier in economic that shapes to money and cost of service: barriers in geographical setting shapes physical accessibility.[34] In general as distance to facility increase ,utilization of its services decreases. It has been shown to be an important barriers to seeking health care, particularly in rural areas. The effect of distance become stronger when it combine with lack of transportation and poor road. In this study refer to whether the service site is convenient for TB patient's obtaining anti TB treatment. Which is including **Physical accessibility** (traveling time, means of travel, traveling distance and office waiting time.) **Economic accessibility** (travel cost , financial support **) Social and cultural accessibility (** legal, workplace or language barriers**).**

2.8.5 Perception

When person is ill ,his /her perception as well as other predisposing and enabling factors influence him /her to take treatment (or) not to take treatment .Perception refers to patient's notice or awareness of his / her illness (susceptibility severity), treatment process and benefit of TB treatment.

Perceived susceptibility: Individual vary widely in their feelings of personal vulnerability to a condition. Thus, this dimension refers to one's subjective perception of risk of contracting a health condition. E.g over crowed housing condition .

Perceived severity: Feelings concerning the seriousness of contracting an illness or leaving it untreated also vary from person to person .This dimension include evaluation of both medical and general consequences and also possible social consequences. E.g complication of TB

Perceived benefit: While acceptance of personal susceptibility to a condition also believed to be serious was held to produce a force leading to a behaviors. It did not define the particular course of action that was likely to be taken:

this was hypothesized to depend upon beliefs regarding the effectiveness or benefit of the various actions designed to reduced the threat of illness. [22] The benefit of health service is a very important and crucial point for patient to decide to use one of the health services. It is a significant factor that motivates patients to achieve their health need .E.g complete treatment and complete cure.

A positive perception on TB treatment will help patient gain more knowledge and pass this experience on. This experience can determine proper health care seeking decision of patients.[28] Negative perception on TB treatment will lead to gain improper health seeking behaviors for that disease treatment and also lead to delay in TB treatment . (E.g go to indigenous medicine or pharmacies etc)[11]

2.9 Case Detection Process of TB and The Delay Behaviors

Control stretegies for TB involve two components : case finding and case holding .Currently, *active case finding* i.e attempts to screen populations at large or to target specific populations,is much less widely used than *passive case finding*(i.e only those who come to the health facilities are screen and diagnosed.){Murray 1994} Owing to the fact that the priority of TB diagnosis is the passive case-finding of patients with respiratory symptoms using direct microscopy, the patient's health related behaviours is key issue, as is quality of TB health services.The summary ***indices currently used for early detection of infectious TB cases*** are " ***Patient's Delay", "Doctor's Delay" and " Total Delay"***.The method of analysis for such studies has beeen well described by Aoki et al. These indices have weakness in that they depend on the patient's memory of inherently subjective symptoms,and also in that they refer only to patients who have been successfully diagnosed.However,they could serve as the only measurable and practical indicators for coverage of case detection.[11]

Goffiman(1963)talked about different coping mechanism of illness label, such as patients covering up symptoms ,presenting themselves as being a close to normal, controlling information about the condition or avoiding discussion of condition. According to Goffiman's theory, stigma or illness label cause the patients delay taking treatment. Vital to TB control programme is the knowledge and understanding of the delay behaviors. Being cost-effective and life-saving

strategy, it plays a important role in the early detection of the infectious cases, the affording justice to those not yet infected. However, an individual may live with one or more potentially serious symptoms for a month and not seek help .This is called delay behavior .[35]

Patient's delay is measured as the time between when a person recognizes the existence of a symptom and when the person first seeks treatment. This is supposed to reflect their awareness of the health problem on his or her own and reflect their notices of the availability of health services. A major factor in delay is the perceived factor of expense, especially for poor people when money is not available, people persuade themselves that the symptoms are not serious enough to justify the expense. A delayer is likely to be poor educated and lower class in society. Older people delay longer than younger , as do people no regular contact with a physician. Another factor which predicts delay is the nature of the symptoms, when a symptom is similar to one that previously turned out to be minor, the individual will seek treatment less quickly than if the symptom is new.[36] Feeling of invulnerability might also predict delay seeking treatment. Highly secure independent, self-confident people believed that they were generally invulnerable to illness and were less threatened by symptoms and so might ignore them (negative illness behaviors).[26]

At the same time patient's delay was a result of having to choose from competing health services: namely indigenous medicine , pharmacies, private practitioners or hospital and public services, etc (positive illness behaviors). Again it should be born in mind that patients may never come to be known to the public service and we could have gotten a distorted picture of the problems.[12] Many people with symptoms of TB is first approach a private doctors (Valeza et al .1991; Pathania et al., 1997). A process of multiple and varied help seeking that may be called "shopping" for diagnosis and treatment thereby begins. This kinds of help seeking behaviors of TB patients including initial choice of treatment and health seeking steps. For example, , a study from Mae sot (health messenger 1999, Thailand) disclosed about the patient's delay in getting the diagnosis: a man had coughing for 3 years but it was not disturbing and when he went to the center ,cough syrup was given. He did suspected TB, only when he suffered from loss of appetite, weight loss, lack of energy and cough worsened. Typically ,poor patients end up in public health services, mainly

because they cannot pay for prolonged care in the private sector (Nair et al. 1997) .Moving from one provider to another often delays the diagnosis and also delay to start to proper treatment , thus increase the likelihood of spread of disease , developing of multi-drug resistant TB and often involves considerable costs to patients.[33]

According to Article 2 of the Universal Declaration of Human Rights ,which outlines the rights of the migrant who crosses an international border ,whether seeking work or refuge ,including access to health care. The development of strategies to provide accessible and effective health services for the migrant with TB is therefore an important public health issue as well as a human right issues.[11] Although migrants are of major concern to TB control programme ,fear of being reported to the authorities remains a potent disincentive to seek care. Migrants frequently delay seeking care, sometime for as long as for more than two months, leading to increased risk of transmission of TB infection.[37]

2.10 Previous Studies on factors relate to Patient's Delay

In a review of TB control Programme in Far East Region of the International Union Against TB (I. U .A .T), reviewed that " delay is a common problem in the region". In Portugal (Gonsalves, 1981), the series of 412 smear-positive patients, over 90% had obvious symptoms. The delay between the first complaint and first visit to health facilities was less than a month in 63.6% of total cases, 1-3 months delay was 22.6%, 3-6 months delay was 9% and more than 6 months was 4.8%. Another system delay between the first visit to health facilities and treatment start was less than one month about 78% of total cases, 1-3 months in 15% and more than 3 months in 7% of the cases. There was no correlation noted between age, sex of patient's delays.

In Japan, (Iwassaki, 1981) a survey of 1,268 TB patients , reported that delays attributable to patient's failure to seek medical help did not depend on sex or age. There were distributed as follows ; up to one month was 69.2%, 1-3 months was 11.2%, 3-6 months was 6.3% and more than 6 months was 5.8% .Among the reason for delay by patients are 60% thought that they had only a beginning of condition, 11% worried about their symptoms, only 6% were afraid of TB. Other factor was the distance of patient's house from the health centers or fear of being absent from their

income jobs. Cases detection in Japan, (Aoki ,1985) a study on the factors influencing patient's , doctor's and total delay of TB revealed a median doctor's delay longer by 2 weeks than that of patient's delay. It also revealed that distribution of patients varied from one area to the others. Patient's delay in older age group are longer than the younger age group. A longer patient's delay was also noted among the laborers as compared to the office workers.

A study of factor related to behavior of Bangkok chest center, Thailand (Korenko,1988); 200 patients were analyzed. with 42% of them had 1-4 weeks delay; 26.5% and 22% had a delay of 5-12 weeks and 13-24 weeks respectively. With 9.5% had more than 24 weeks . Mean length of delay was 12 weeks. This study noted that the factors significantly related to patient's delay were age, income, knowledge of TB, perceived susceptibility and severity of TB, also perceived benefit and barrier of action. Sex and level of education were found to be insignificant.

Table 7 show that the facts on delay range from a few weeks to over a years from time of onset of symptoms to health service utilization of TB patient. Which were studied in 1990 and findings at two Rural Health Units and the Barangay Health Station , Philippines were as follow.

Table 7 Duration of Symptoms andHealth Service Utilization,Phillippine

Duration of Symptom	Number of TB patient and percentage (Valeza,1990)	Number of TB patient and percentage (Sarmiento,1990)	Number of TB patient and percentage (Sarmiento,1990)
< 1 month	33(13.5%)	65(52%)	73(40%)
1-3 month	60(24.6%)	17(13.6%)	64(35%)
4-12month	42(17.2%)	23(18.4%)	32(17.5%)
>12month	97(39.8%)	4(3.2%)	14(7.5%)
No symptom	11(4.5%)	-	-
Don't know	1(0.4%)	16(12.8%)	-
Total	224(100%)	125(100%)	183(100%)

Source; Sarmiento 1990, Valeza et al ,1990.

In Sarmiento's study (1990) , some of the interactive factors which might affect health facilities' delay and total delay were distance of the sputum collection center from microscopy center , work load of the microscopist ,which effect on delay in the insurance of sputum examination, all of them result to delay in the initiation of treatment: and drug distribution scheme which cause delay in the treatment initiation and interruption. The erratic and usually insufficient supply of the drugs was deemed a crucial factor affecting health facilities' delays and total delay. As a result of drug supply problems , the initiation of treatment was delayed for approximately 20 days in an area. Only 12% of health workers in that area were able to initiate patient to treatment on the same day of result. About 30% of them had to wait for a month or more for their patient to be treated. Once a sputum examination and or chest X –ray has been performed, results are usually not immediately known and a diagnosis is not readily available. Sarmiento also noted that a diagnosis was made on 43% of the TB symptomatic and 33% of the TB patients on first visit, they get their confirm diagnosis at least after two time of visit(56-67%). But 10% of patient had made fourth visit or more for diagnosis.

Ishikawa et al (1990) in a study on the assessment of the TB case-finding in the context of primary health care in Nakornsawan, Thailand revealed that patient's delay is longer than doctor's delay.

T.B.Sulaik (1994) the result of study at Regional TB Center II , Thailand totals patient's delays with 73.2 % in which 39.4% up to one month ,33.8% beyond one month. The factor found to be significantly associated with patient's delay was sex ratio over male and female in the study group 3:1 . However, cross tabulation between sex and patient's delay revealed that females had longer than males ,45.2% and 26.9% respectively beyond one month. The association was found to be significant(p-value=0.028)[38]

During 1990-94, patient's delay, doctor's delay and total delay in TB diagnosis and treatment study at 12 th Zonal TB center , Yala ,Thailand, total number o f 199 TB patients using questionnaires , the first three month the proportion of total delay was 35.8%, patient's delay 23.1% and doctor's delay 37.9% .This study is beneficial for 12 th Zonal TB center in carrying out the most appropriate strategies in diagnosis and treatment of TB patients. [39]

J.E Pairkis et al (1995, Australia) studied about delay in the initiation of treatment for 142 TB patients including migrants. A retrospective record review with particular attention was given to the periods between(1)onset of symptoms and initiation of treatment ,(2) determination of sputum positive and initiation of treatment. An expert panel notified 30 days and 3 days as “acceptable” periods for (1) and (2) ,respectively. Only 31% of patients commenced treatment within 30 days of onset of symptoms. This was so for both sputum smear –positive and negative- cases, and was not significantly related to the site of infection ,referral source, age, gender or ethnicity of patient.[14]

In Myanmar ,a study (Thuzar Chit Tin ,1996) showed that 68.8% of patient attending South Okkalapa TB center, who had taken treatment prior to coming to that center. About 58.75% took treatment in the private sector whereas 6.25 % took indigenous medicine. The majority of them 83.75% took self-treatment.As review on duration of illness before taking TB treatment start from 1 day to more than 181 days. Majority with 55% had delay period between 1-30 days.[40]

Le Thanh Liem (1999) similar study on adult TB patient in Long An Province, Vietnam; showed that 69.8% of the respondents delayed in treatment, among them 50% delayed for 5-8 weeks,43.3% for 9-24 weeks and 6.7% for more than 24 weeks. Only marital status had associations, also commented some of the patient’s delay was still problematic and need to be considered about wrong perception on etiology and transmission. Especially women and low educated people in particular area were still kept their traditional perception as the basis of their way of thinking and tried to hide the fact that they had TB.[41]

A.Yilmaz et al (1999) study about delay in the diagnosis and treatment of hospitalized patients with smear positive pulmonary TB in Turkey. several interval and delays were calculated ,median application interval was 17.5 days., median referral interval was 3.5 days median diagnosis interval was 3 days . Patient’s delay was present in 28.4% cases. Delays in diagnosis and treatment of patients with smear positive pulmonary TB result in increased risk of infection transmission. Several reports have indicated that delays in diagnosis and treatment of TB are common among both hospitalized patients and out patient center. [2]

S.Abebe et al (2000)study about 384 pulmonary TB patients about their patients' delay and health system delay in the diagnosis of pulmonary TB in northwest Ethopia . Major finding about patient's delay were 48 % of cases with more than one month, in logistic regression ,age above 45 years, home distance >10 km from medical provider, low level of knowledge about TB and self treatment were significant.[42]

In Sao Paulo City,(WHO, 2001)where public sector TB care is available ,20% of TB patients was first diagnosed in private sector ,the mean delay in diagnosis was 12.5 weeks. In Kenyan study, 90% of TB suspects said that they had attend a health care facility (private and public) for an average of 5 times and 65 % neither had a chest radiograph taken nor sputum examined.[40]

CHAPTER 3
RESEARCH METHODOLOGY

3.1 Study Design

This study was a retrospective descriptive and analytic cross-sectional study, where the data was collected through a structured questionnaire by interviewing, covering about TB patients on background information, predisposing, enabling and need factors related to patient's delay to TB center treatment among Myanmar migrant TB patients.

3.2 Target Population

The target population in this study was adult Myanmar migrant TB patients who were attending at TB centers of selected district government and private hospitals in Samut Sakhon Province. Patients underwent treatment from *August 2004 to February 2005*. All cases were diagnosed as pulmonary TB and were confirmed by radiology and or sputum microscopy and or sputum culture. Regardless of treatment regimen(Categories; I/II /etc) or type of treatments (DOTS /others)and all new TB with or without associated with other diseases were selected. Both male and female, with age group 15 years old and above, who came for anti-TB treatment at in or out patient department were included in this study.

3.3 Place of Study

Samut Sakhon province was purposively chosen because the province had high migrant population and also heath care facilities were estiblished for migrants incliding health insurance system and more than 40000 migrants workers had registered at private hospital and also at government hospital. It was a chance to assess migrant people illness behaviours and health seeking patten for TB treatment . Secondly,in the era of migrants and infectious diseases, most of the survey were conducted with HIV/AIDS and forgot about old disease, but TB was still highly devastating and great negative impact to all. Thirdly ,most of the surveys were conducted at the border areas such as Ranong, Mae Sai not at Samut Sakhon which is

not a border area. Therefore ,information of migrant workers in the inner part of Thailand is still limited, and TB is also still a public health concern.

3.4 Sample Size Estimation

The sample size was calculated by using the statistical formula for "Estimating a population proportion with specified absolute precision" [43]

$$n = \frac{Z^2_{\alpha/2} P(1-P)}{d^2}$$

n = the desirable calculated sample.

$Z_{\alpha/2}$= 1.96 (95% confidence level for two sided test)

P = prevalence of patient's delay 73.2% (0.732) [38]

d = Degree of accuracy desired setting at (7%)

$$n = \frac{(1.96)^2 (0.732)(0.268)}{(0.07)^2}$$

≅ 154

3.5 Sampling technique

To obtain the required sample, purposive sampling technique was used to select the sample. The study subjects were selected in following reasons:

Samutsakhon Province in Ratchaburi fourth TB control area was **purposively selected** as a consideration the following points:

(1) Such study was not conducted previously in this area..

(2) Most of target migrants population were stayed in this area.

(3)Feasibility in term of approachability, transportation and limited time frame , etc.

Finally, required number of subjects was obtained by ***using inclusion sampling criteria ,*** most of the TB patients attended to TWO hospitals of Samut Sakhon within the treatment period of August 2004 to February 2005. In this last stage, 157 Myanmar migrant TB patients were selected .[44]

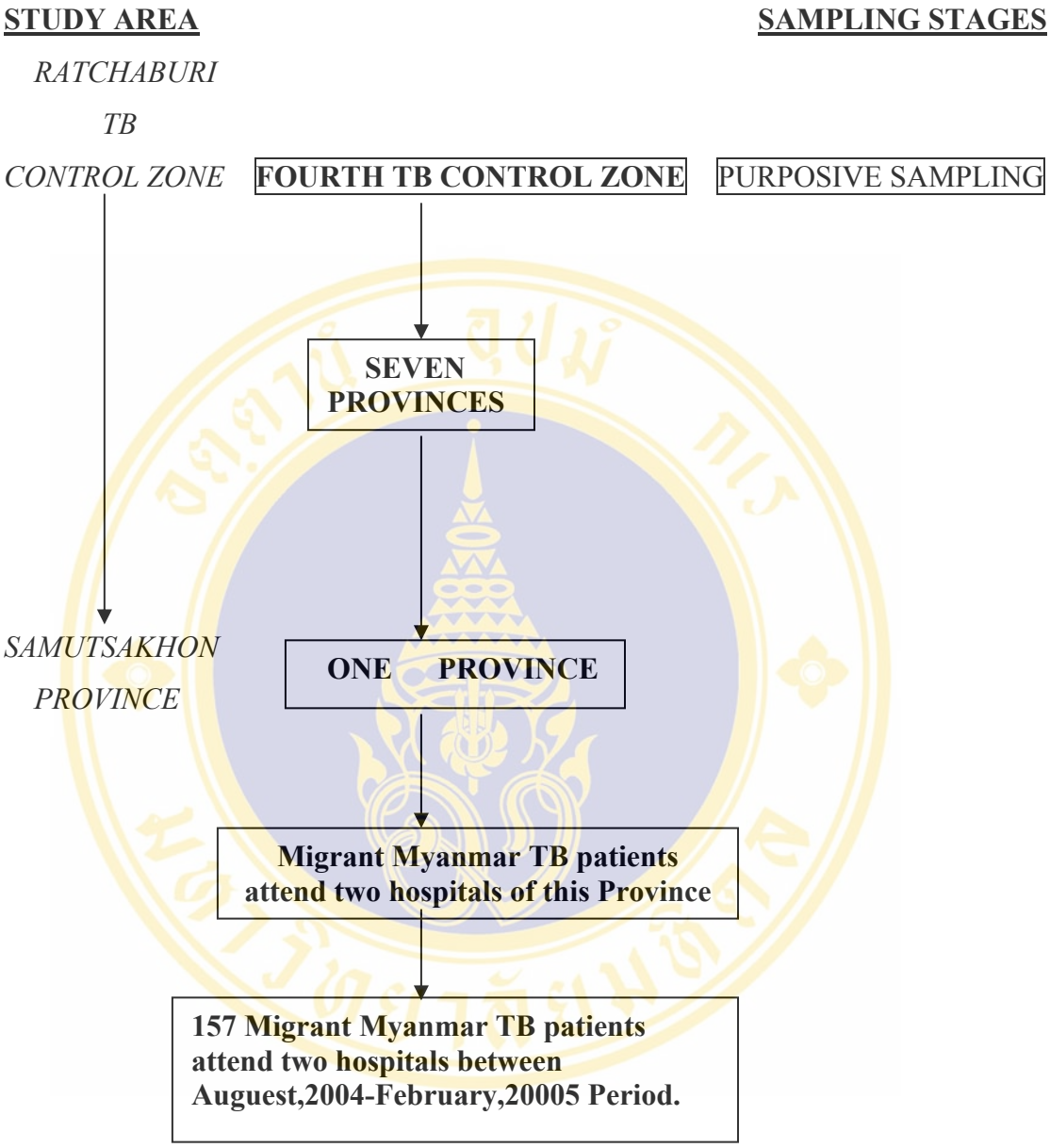

Figure 5 Diagrammatic Representation of Sampling stages and Techniques.

3.6 Research Instruments

Data had collected by using an interview questionnaire designated by the researcher. Almost all of the questions in the questionnaire were closed ended and some were open-ended. Initially the questionnaires was prepared in English and then translated into Myanmar language. For the reliability and validity of the questionnaire, a pre-test was conducted with 30 TB patients in Srivichi V Private hospital TB center, Samut Sakorn Province. After that, the operational questionnaire was finalized and set ready to collect data in **SamutSakhon** Province, Thailand. The questionnaire composed of **Five** parts as follows.

Part I : General information of TB patient;

It was used for recorded information from medical insurance card and treatment record about their confirm diagnosis. Date of treatment initiated was also checked to know that each patient was entitled to this study sample or not.

Part II: **Predisposing Factors**,

Such as ***age, gender, ethnic group, marital status, living status, occupation*** and knowledge were contained in the second part About knowledge, the respondents were interviewed about their ***knowledge*** refers to knowing or recalling about etiology of TB disease, chain of infectious processes, symptoms, prevention and treatment of TB.

Knowledge was assessed by 14 multiple choice questions, (8) for knowledge of TB etiology and chain of infectious process, and (6) for TB symptoms, prevention and treatment. All the items were converted to scores. ***Each correct answer was given one score*** with a minimum- maximum score of 0 and 14 respectively. Knowledge level was classified into 3 groups based on Bloom's cut off point for knowledge, in which cut off point was determined by 60%-80% of full marks.[45]

Those who had got

12-14 score as good knowledge;

8-11 score as fair knowledge and

0-7 scores as poor knowledge.

Part III: **Enabling Factors**

In this part, the questions focused on ***Availability.*** It referred to the conditions under which TB patient would get anti TB treatment. It included the available resources of services such as nearest TB centers, facilities, source of information about TB treatment and TB centers.

Accessibility *to TB centers,* included *physical*, (distance, mode of transportation, traveling time spent, waiting time to see a doctor) *economical* (travel cost, financial support) and *socio cultural*(legal ,work place, language) accessibility and also questions about *education and family income.* Questions were both opened and closed ended.

Part IV : Need Factors

In this part, respondents were asked about their *Perception.* It refers to patient's personal belief and way to notice about his or her disease severity and benefits of TB treatment. The respondents were asked about their opinion on the TB disease and treatment; 8 positive and 3 negative designed questions: Total "11" questions were prepared on basic of 3 level Likert's Scales. The respondent's scores on the answer to each question were scored lowest "1" to highest "3", depending on either the question was positive or negative. [46]

For the positive perception question, the scoring was given as follows:

Agree	= 3 scores
Not sure	= 2 scores
Disagree	= 1 score

For the negative perception question, the scoring was given as follows.

Disagree	= 3 scores
Not sure	= 2 scores
Agree	= 1 score

Thus, total scores was "33" for "11" questions. The highest score were also 33 and lowest score were 17. The mean score were 27 with standard deviation (S.D) 3.33. The levels of perception were classified into three level based on total score.

>Mean +SD =High

Mean +SD = Moderate

<Mean +SD = Low level.

Part V: Information about Delay to TB treatment

The information about dependent variable included the time delay to seeking of TB center treatment and their main reasons. Then, the other questions were the way of sequences of HELP-SEEKING (shopping for diagnosis and treatment); may be the actions undertaken by the patient when he or she suffered from symptoms of TB. Which may either be self-medication, visiting a traditional or spiritual healers, pharmacy, going to a private doctors or other government health institution etc, as well as to other places they desired.

3.7 Pretesting of the questionnaire

For the relability of rearch instrument , pretesting on the questionnaire was prepared , prior to data collection, the draft questionnaries were tested to “30” respondents at TB center , Samut Sakorn Province. Prepared questionnaires were interviewed to TB patients and they were requested for their suggestion and ideas on the words or sentences, which they found difficult to understand and answer. After that, all the questions were reviewed and revised to adjust understandability and be able to answer. These pretest results were analysed for reliability by using Mini Tab with alpha cofficient (0.9-0.8)

Content Validity : Regarding the suggestions of the respondents, improvement of some questions was done and discussed .The complete questionarie was revised and evaluated by thesis commmitte and expert personal from MOPH, Thailand. Revising was done accordingly and then adjusted final version with Myanmar language of the questionarie was prepared . It was fair enough to continue for the study.

3.8 Data collection

After completion of the operational questionnaire, and being received approval from the thesis advisory committee, the researcher requested the cooperation and assistance from M.P.H.M office. By having telephone contact with officers of migrant disease control section in **SamutSakhon** Province, General Hospital and Srivichai V Hospital., M.P.H.M office sent an official request letter to the responsible persons and then researcher went to respective TB centers of assigned areas . Researcher with coordinators from TB centers and also from local NGO recruited to conduct the

interview process. Training and explanations about questionnaire and orientation on the objectives of this study was conducted to the interviewers.

Data was collected by face to face interviews of the study population by using the mentioned structured questionnaire. To control the possible bias, regular and close supervision of data collection was done. One questionnaire had taken twenty to thirty minutes per person. The period of data collections was one month and was conducted at hospital O.P.D (Out Patient Department) as well as their works place and their dormitories. Most of the work place interviews were conducted with the permission of their employers at their work sites. Their status of immigrant registration, reasons to migrate and their political aspects were not taken into consideration for sample selection. Despite some limitations, most of the respondents appeared willing to answer the questions as they felt comfortable to talk with the interviewer of same nationality in foreign country.

After collecting the data, researcher had received 157 cases. Therefore, field questionnaires had numbered from "001" to "157" and had checked one by one for completeness and validity of data.

3.9 Data Analysis

3.9.1 Data Entry

This was done after checking the completeness, missing value, and coding of the questionnaires, and then analyzed by using Mini Tab Statistical Package.

3.9.2 Data Processing

In order to obtain the research objectives, the data was sorted and grouped, according to the following headings.

1.DESCRIPTIVE STATISTICS --The number and percent distribution of TB patients by personal characteristics & other factors were tabulated. Uni variate analysis with mean ,S.D was calculated for quantification.

2.ANALYTIC STATISTICS – Bi variate analysis by using Chi-square and Contingency cofficient correlation test were used to test the association between independent and dependent variables of conceptual frame work and objectives of the study .Critical significant level was set at alpha (0.05).[47]

3.10 Ethical considerations

The data was kept as confidential but after completion of the study, the results come from the data will share with the TB prevention and control section and , infectious diseases survillence system of SamutSakhon Province. It is useful tool for further prevention and implemention projects for migrants workers. The main objective was not to identify the individual person's information but as to know in group of migrants. Therefore, the most confidentiality regarding respondent's name ,address and all other identities were kept secret strictly. In addition, all data were kept very confidential during and after data collection.

The researcher described himself as a student who was doing research in this field for the greater benefit in health aspects of migrants .The researcher did not ask about the reasons they migrate to Samutsakhon and how they migrated. The researcher also avoided blaming or futher stigmatizating as disease discrimination to migrant workers at foreign country.Moreover,during intervew section ,they should not be blamed or looked downupon their knowledge and perception regarding TB disease prevention and treatment. The respondents were allowed to drop out at any time without any obligation .

CHAPTER 4
RESULTS

This descriptive cross sectional survey was undertaken to study the patient's delay in TB center treatment among Myanmar migrant TB patients. According to the estimated sample size, 157 Myanmar migrant newly diagnosis TB cases were selected by purposive sampling. They were visited to Samut Sakhon General Hospital and Srivichai V Private Hospital, between January and February 2005. These TB patient were confirm diagnosed by radiological and or bacteriologically .

They were interviewed using structured questionnaire by researcher himself and his trained interviewers. The data collection was based on the study conceptual framework. The respondents had asked about their background information, predisposing factors, enabling factors and need factors. In which, socio-demographic factors, knowledge and perception about TB and its treatment were recorded. In which, information was collected on factors related with availability of infrastructure of TB services and also sources of information about TB center, TB disease and its treatment course. Accessibility to the TB center, like conveniences to visit as well as overall expense was also collected. Time delay with their main reasons was recorded as information about delay to TB treatment. To get more understanding about their delay, an account of their health seeking during delay period was taken.

The descriptive analysis section includes frequency, and percentage of respondents. The frequency distribution and cross tabulation with Chi-square test was performed to check the homogeneity and association of background characteristic between non delay and delay groups. Statistical tests were two-tailed and the confidence interval for the study was set at 95% (p value $\leq$ 0.05).

The results of the study were divided into **Seven** parts. Including

4.1 Descriptive general characteristics of Myanmar migrant TB patients.

4.2 Period of delay in seeking treatment from TB center and reasons for delay.

4.3 Enabling factors including availability and accessibility to TB center.

4.4 Knowledge about TB disease and its treatment.

4.5 Perception on severity of TB and benefit of TB treatment

4.6 Possible association between independent variables and delay in seeking TB center treatment.

4.7 Some suggestion from the respondents.

4.1 General characteristics of Myanmar migrant TB patients

Socio-demographic factors were identified by age, gender, marital status, education, occupation, total members in present house and income. The distributions of these factors were presented in Table 8. The majority (75.16%) of the Myanmar migrant TB patients in this study were young working age group between 15 and 34 years. The youngest age was only 15 years, oldest age was 56 years and the average was 30 years. There were more male Myanmar migrant TB patients than that of female. Nearly 65% of TB patients were married.

Most of the Myanmar migrant TB patients had attended formal education (76.44%), although about half of them finished only primary school and but middle school as second majority group. There was 1.91 % had college education but approximately 10% had no education.

Two third of Myanmar migrant TB patients were engaged sea food processing works (64.97%).Next groups were factory workers(22.29%).The remaining were employed in general labors(8.28%)and other small and temporary jobs(4%) . Most of the TB patients (65.61%) shared their living apartment with one to four persons .One third of them stayed with five to nine members group in same living apartment. Around 5 % stayed as group with more than nine members; a maximum 20 members in one apartment. The family monthly income, ranged from 2,000 Bahts to 20,000 Bahts, average was 5859 Bahts. Majority of Myanmar migrant TB patients (70.70%) had family monthly income between 3001 and 7000 Bahts which was lower than Thai national per capita average income (i.e. 10,000 Bahts). Those family income were below and equal to 3,000 Bahts per month, comprised of 8.92% and around 20.38% had family monthly income more than 7,000 Bahts.

Table 8 Number and percentage distribution of Myanmar migrant TB patients by ***Socio-demographic factors***

TB patient's Socio –demographic factors	Number (n=157)	Percent (%)
Age (years)		
15-34 yrs	118	75.16
35-56 yrs	39	24.84
Mean=29.94 : S.D=7.905 , Max=56, Min=15		
Gender		
Male	90	57.32
Female	67	42.68
Marital Status		
Single	42	26.75
Married	99	63.06
Divorced/Separated/Widowed	16	10.19
Highest education attainment		
Illiterates	15	9.55
Read and write (no school education)	10	6.37
Primary school	59	37.58
Middle school	47	29.94
High school	14	8.92
Collage/university	3	1.91
Others (monastery education, etc)	9	5.37
Occupation		
Seafood Processing workers	102	64.97
Factory workers	35	22.29
General laborers	13	8.28
Others (small /temporary jobs/jobless)	7	4.46
Total members in present house		
≤4 persons	103	65.61
5-9 persons	46	29.30
>9 persons	8	5.10
Mean=4.19 : S.D=2.61 :Max=20 , Min=1		
Family monthly income (baht)		
≤3000	14	8.92
3001-7000	111	70.70
>7000	32	20.38
Mean=5859 S.D=2914 :Max=20000 ,Min=2000		

4.2 Period of delay in seeking treatment from TB center and reasons about delay.

Patient's delay was evident in Table 9, Patient's delay total was 71.34% among Myanmar migrants TB patients. When grouped into short and long delay; short delay was 29.30% and long delay was 42.04%. The longest delay period was 365 days (one year) and minimum delay seeking period to TB center treatment was only 2 days. The rest of the respondents, 28.66% were non delay patients.

Table 9 Number and percentage distribution of Myanmar migrant TB patients by ***patient's delay period in seeking Anti TB treatment***.

Delay patients	Number (n =157)	Percent (%)
Delay patients in total (short+ long)	**112**	**71.34**
Short delay (More than 30 days up to 60 days)	46	29.30
Long delay (More than 60 days)	66	42.04
Non delay patients (≤ 30 days)	**45**	**28.66**
Mean± S.D= 82.88±74.59 Maximum= 365	Minimum=2	

When delayed patients were classified according to their main reasons for delay as in Table 10. Majority of patients (52.68%) gave reason that they had to wait for health insurance cards. Another reason (28.57%) for delay was due to they perceived that symptoms is minimal and gradually arise therefore they did not take prompt action.

Similarly in Table 11, when the patients were grouped by main reasons to come to TB center were showed that 64.97% of TB patients' reasons were due to labor registration screening program. Others were come to TB center as self initiative (26.75%) due to suffering symptom as well as urge by others (8.28%).

Table 10 Number and percentage distribution of delayed Myanmar migrant TB patient with ***main reasons for being delay.***

Main reason Statements	Delayed Number (n=112)	Percent (%)
After labors medical check up, wait for health insurance cards	59	52.68
Symptoms are minimal and gradually arise	32	28.57
Temporary treatments and get well	10	8.93
Financial problems	4	3.57
No accompany/support person	4	3.57
Busy with working/ change job	1	0.89
Ohers(don't think it as important,etc)	2	1.79

Table 11 Number and percentage distribution of Myanmar migrant TB patient ***with main reasons for coming to TB center.***

Main reason Statements	Number (n=157)	Percent (%)
Come by self initiative		
(i) Cannot work effectively	24	15.29
(ii) Suffering with more symptoms.	15	9.55
(iii) Others (come as minor illness, etc)	3	1.91
Detected by labor registration as having TB	102	64.97
Urge from others (friend, family, neighbors, etc)	13	8.28

During their delay period, they were treated with alternative treatments to relief their symptoms. Table 12 was shown that there were only one fourth of the respondents that did not do any things about their symptoms and only they want to wait and see if it was increase in nature or not. Others chose another aspect with nearly same percent, they had gone to drug store, nearest familial local practitioners

and used home remedies. The reason for choice of seeking treatments were vary from near convenience reason (24.7%) to ideas about think as minor illness and also not important illness. (28.18%).

Table 12 Frequency and percentage distribution of ***seeking treatment types and their reasons*** during delay period of Myanmar migrant TBpatients.

Statements	Seeking treatment frequency(n=124 *)	Percent (%)
Seeking treatment types		
Drug store	34	27.46
Other(do nothing)	31	24.99
Home remedies	28	22.57
Local practitioner	27	21.76
Other health center	4	3.22
Reasons for choice of seeking treatments		
	frequency (n=117*)	**Percent(%)**
Others (don't think as it as important, etc)	33	28.18
Near	29	24.76
Think about minor illness	21	17.93
Suggested by others	11	9.39
Good reputation	9	7.67
Cheap	8	6.83
Familiar	6	5.24

*Multiple answers (yes) for those got above informations among total respondents. (exclude those who did not have information)

4.3 Enabling factors including availability and accessibility to TB center.

4.3.1 Availability to TB center

It was found that most of the respondents (86.62%) knew that at least one TB center from private or government hospital was provided for them .Especially, that center linked with their social security system.

About 92% (146) of respondents reported that the location and traveling were convenient for them. Sources of information was an important factor to help patient to seek treatment from TB center . In Table 13 , information received regarding TB center and its services from various sources i.e. 52.87% of total respondents received from their hospital doctors and staffs during their medical check up or minor illness treatments. Besides, 31.85 % of TB patient also knew from their employers.

Table 13 Frequency and percentage distribution of Myanmar migrant TB patients by ***Availability (sources of information)regarding TB center and its services.***

Sources of information	Frequency of Answers*	Percent (%)
Hospital doctors/staffs	83	52.87
Employers	50	31.85
Private center doctors	20	12.70
Friends	17	10.83
Pamphlets	8	5.10
Newspaper / magazines	7	4.46
Family members	6	3.82
Myanmar health volunteers	5	3.18
Previous TB patients	5	3.18
Television	2	1.27
Others (from school, public places, etc)	2	1.27

*Multiple answers (yes) for those got above informations among total respondents. (exclude those who did not have information)

Information received regarding TB and its treatment course from various sources was shown in Table 14 In which nearly half of the respondents (45.22%) of the total respondents received information from their hospital doctors and staffs during their medical check up or minor illness treatment; nevertheless only 19.11 % of TB patients knew from private center doctors.

Table 14 Frequency and percentage distribution of Myanmar migrant TB patients by ***Availability (sources of information)regarding TB and Treatment course.***

Sources of information	Frequency* of Answer	Percent (%)
Hospital doctors/staffs	71	45.22
Private center doctors	30	19.11
Friends	27	17.20
Previous TB patients	22	14.01
Pamphlets	20	12.74
Not clearly know from where	20	12.74
Newspaper/ magazines	19	12.10
Myanmar health volunteers	14	8.92
Employers	8	5.1
Others (social contact, school, etc)	4	2.55
Television	2	1.27

*Multiple answers (yes) for those got above informations among total respondents. (exclude those who did not have information)

4.3.2 Accessibility to TB center

(A) Physical and timing accessibility

Table 15 revealed that half of the respondents (51.59%) can easily to reached the TB center within the distance of 3 km or less. Around one fourth of them had to travel more than 5 km to get to TB center. The average traveling distance was 3.95 km; the range of distance was 0.5 km to 15 km. Regarding traveling time, two third of

them had spent time within half an hour and nearly one third had spent time within 30 minutes to one hour. There were only 3.8% that had to travel longer than one hour. However , the maximum traveling time for patients was three hours.

Table 15 Number and percentage distribution of Myanmar migrant TB patients by ***Physical /Timing Accessibility*** from patient's house to TB center.

TB patients Characteristics	Number (n=157)	Percent (%)
Distance(kms)		
≤ 3 km	81	51.59
3.1-5 km	36	22.93
>5 km	40	25.48
Mean=3.95 S.D=2.74 Max= 15 , Min=0.5		
Traveling Time		
5-30 minutes	105	66.88
31-60 minutes	46	29.30
> 60 minutes	6	3.82
Mean=33.63 S.D=25.65 Max= 180 , Min=5		
Mean of Travel		
On foot	3	1.91
By bus	103	65.61
By motorcycle	32	20.38
Others(taxi/ factory car)	19	12.10
Waiting Time to see doctor(in minutes)		
5-60 minutes	71	45.22
61-180 minutes	79	50.32
181-300 minutes	7	4.46
Mean= 99.33 S.D=61.25 :Max= 300 , Min=5		
Physically convenience		
Less Convenience (score=0-1)	26	16.56
Fairly Convenience (score=2)	63	40.13
Convenience (score=3)	68	43.31

Nearly two third of the respondents (65.61%) came to TB center by bus as a mean of travel and 20.38% came by motorcycle. Generally, waiting time to see doctors were ranged from 5 minutes to 5 hour. However, those that reported waiting times to see doctors was longer than 3 hours, comprised of only less than 5%. Most of the respondents (83.3.44%) perceived that they were quite convenience physically, to come for TB treatment.

(B) Economical accessibility to TB center

Table 16 Number and percentage distribution of Myanmar migrant TB patients by ***Economical Accessibility*** to TB center.

TB patients Characteristics	Number (n=157)	Percent (%)
Overall money expense		
30-50 bahts	87	55.41
51-100 bahts	55	35.03
>100 bahts	15	9.55
Mean= 74.29 S.D= 105.35 :Max= 1070 , Min=30		
Financial Support		
Self	147	93.63
Family	6	3.82
Others	4	2.55
Expense is a burden for you		
Yes-	30	19.11
No-	127	80.89
Employer deduct payment whenever go to TB center		
Yes-	85	54.14
No-	72	45.86

Economy wise reviewed on Table 16, more than half of the respondents (55.41%) spend overall expense for treatment at TB center were (30 – 50 Bahts). The maximum expense was 1070 bahts. Main financial support for this overall expense by themselves (93.63%) and they perceived that it was not a burden(80.89%).

But more than half of the respondent (54.14%) had no chance to get their daily allowance or per Kg allowance from their employer during they came to TB center's appointment days.

(C) Socio-cultural accessibility to TB center

Table 17 Number and percentage distribution of Myanmar migrant TB patients by *Socio **cultural Accessibility*** to TB center.

TB patients characteristics	Number (n=157)	Percent (%)
Accompanying persons		
No one (self)	81	51.59
Friend	38	24.20
Family member	26	16.56
Others(manager/ etc)	12	7.64
Any legal constraints to go TB center		
Yes-	11	7.01
No-	146	92.99
Any permission from employer to go to TB center		
Yes-	97	61.78
No-	60	38.22
Ever change job because of TB		
Yes-	8	5.10
No-	149	94.90
Any language barrier when go to TB center		
Yes-	13	8.28
No-	144	91.72

The result from Table 17, more than half of the respondents (51.59%) came to TB center by themselves and the rest were accompanied by either family

member(16.56%) or friends(24.20%) and came with factory manager (7.64%). As review on their related socio cultural problems, about legal constraints to come to TB center were only 7.01%, and language barriers were only 8.28%. Two third of the respondents required permission form their employers to attend to TB center. However, the rest did not required for permission. Only 5% of respondents had ever experienced about change their jobs because of TB.

4.4 Knowledge about TB disease and its treatment,

There were 14 multiple choice questions to test the level of knowledge of the respondents on TB and its treatment with each correct answer given one score .

Table 18 Number and percentage distribution of Myanmar migrant TB patient's ***Knowledges about TB and its treatment*** .

Knowledge Statement	Correct Answer (n=157)	Percent (%)
The etiological cause of TB is the infectious TB germ.	91	57.96
TB can give group of symptoms.	51	32.48
TB patients cough, germs float in the air, spread out.	88	56.05
Respiratory tract is a route of TB infection entry.	91	57.96
Family member infected, other members will be vulnerable.	98	62.42
Working place is poorly ventilated, TB can spread.	78	49.68
Smoking may prone to get TB.	81	51.59
TB may prone to get as an infection in AIDS patients.	58	36.94
Sunlight effectively kill airborne TB germ.	47	29.94
B.C.G vaccination is TB preventive measure for children.	61	38.85
For the prevention of TB spread: cover mouth and nose.	98	62.42
Way to detect infection is sputum microscopy.	87	55.41
Three weeks of TB treatment no longer transmit infection.	40	25.48
Six months multiple drugs therapy can cure TB.	98	62.42

Finding in Table 18 showed that, there were 8 questions for the etiology, symptoms, and chain of infectious process. Among them, only 32.48% of respondents

knew that TB could give group of symptoms. However, 57.96% respondents knew that causal agent is infectious TB germ and respiratory tract is route of infection entry. Approximately half of the respondent knew that TB can spread through air born transmission .and also knew that poor ventilated working place facilitated the spreading of TB (56.05% and 49.68% respectively.). More than half of them (62.42%) knew that family members are vulnerable group and 51.59% knew that smoking may prone to get TB. Only one third (36.94%) of respondents knew that TB may prone to get as an opportunist infection in AIDS patients.

There were 6 questions for prevention and treatment about TB. In which more than half of the respondents (62.42%) had knowledge about preventive method of covering mouth and nose. Similarly, they knew that six months therapy can cure the TB. Only one fourth of the respondents (25.48%) knew that three weeks TB treatment period can prevent TB spread to others. Knowledge about sputum microscopy, the detective method for TB infection was known by 55.41% of the respondents. Only one third knew about B.C.G vaccination and nearly 30% knew the sunlight kill airborne TB germ.

Table 19 Number and percentage distribution of Myanmar migrant TB patients' by ***level of Knowledges*** about TB and its treatment .

Level of Knowledge Number	N1 (nr=157	Percent (%)
Good	29	18.47
Fair	47	29.94
Poor	81	51.59
Good (score12-14), Fair (score 8-11), Poor (score ≤ 7)	Max=14,	Min=0

From the total score of knowledge, good, fair, and poor knowledge level were classified according to the Bloom's cut off point in Table 19. Total scores more than 80% were as good knowledge (score 12-14), total score between 60% and 80% were as fair knowledge (score 8-11), and total score less than 60% were as poor knowledge

(score <7). More than half (51.59%) of respondents had poor knowledge level and but good knowledge was only 18.47%. Nearly one third was moderate level of knowledge.

4.5 Perception about severity of TB, benefit of TB treatment

The questionnaires were designed to measure positive, negative perception and then interviewed together in order to assess whether or not for patients had given reliable answers. Table 20 , was shown that there were 5 questions for the perceived severity of getting TB. Among them, only 34.39 % of the respondents' perceived disagree for negative question that having TB may discriminate them from society (i.e score 3 high perception answer). Similarly, only 56.05% of the respondents perceived disagree for negative question about TB is not permanently cured by drugs alone. (i.e score 3 high perception answer). But majority of respondents (77.71%) perceived highly on that TB is a deadly infectious disease. Respondents of 68.79% perceived that suffering with TB, could partly loose income. Less than half of the respondents (42.68%) perceived that TB can spread to other part of body.

There were 6 questions for perceived benefits of TB treatment; more than three quarter of the respondents, (85%) had same perception about that early TB treatment, speed up recovery and also perception about that the sooner start TB treatment, lesser expense. But nearly half of the respondents (42.04%) had only perceived about treatment does not interrupt your employment status. Nevertheless 77.07% of respondents perceived about irregular taking TB drugs will lead to drug resistant. Round about half of the respondents had their perception with disagree on negative question about delayed in TB treatment may not lead to spread. About 66% of the respondent with the perception of timely treatment of TB can prevent complication.

Table 20 Number and percentage distribution of Myanmar migrant TB patient by ***Perception*** about severity of TB and benefit of TB treatment

Perception Statements	Number of Answer (n=157)	Percent (%)
I. Perceived Severity of having TB		
TB is a deadly infectious disease.	122	77.71
TB can spread to others part of the body.	67	42.68
Having TB may discriminate you from society.	54	34.39
Suffering with TB, could partly loose your income.	108	68.79
TB is not permanently cured by drugs alone.	88	56.05
II. Perceived benefits of TB treatment.		
Treatment TB dose not interrupt your employment status.	66	42.04
Early TB treatment can speed up recovery from TB.	135	85.99
Timely treatment of TB can prevent TB complication.	105	66.88
Irregular taking of TB drugs will lead to drug resistant.	121	77.07
Delayed in TB treatment may not lead to spread of TB.	89	56.69
The sooner you start treating TB, the lesser expense.	134	85.35

In Table 21 , from the total score of perception, high, moderate and low perception level were classified according to the Mean ± S.D. Nearly 70% of respondents had moderate level of perception but high perception was only 14.65% and also only 16.56% was low level of perception. As review on each perception item, more than two third of the respondents (66.88%) were moderate perception on severity. Perception on severity was only with 9.55% in high level and nearly one forths in low level. The respondents perceived benefit of TB treatment mostly at moderate level, one third perceived as high level and one fourths perceived low level on benefit of TB treatment. (43.3%, 30.5% and 26.11% respectively)

Table 21 Number and percentage distribution of Myanmar migrant TB patient by ***Perception level*** **about severity of TB and benefit of TB treatment**

Level of Perception	Number (n=157)	Percent (%)
Overall Perception Level		
High(score 31-33)	23	14.65
Moderate(score 24 -30)	108	68.79
Low(score 17-23)	26	16.56
Mean± S.D= 27±3.33	Maximum= 33	Minimum=17
Perceived Severity of Disease		
High(score 14-15)	15	9.55
Moderate(score 11-13)	105	66.88
Low(score 8-10)	37	23.57
Mean ± S.D = 11.72 ± 1.59	Maximum= 15	Minimum=8
Perceived Benefit of treatment		
High(score 17-18)	48	30.57
Moderate(score 14 -16)	68	43.31
Low(score 8-13)	41	26.11
Mean± S.D= 15.27± 2.311	Maximum= 18	Minimum=8

4.6 Possible association between independent variables and delay in seeking TB center treatment.

4.6.1 Association between the socio-demographic factors of Myanmar migrants and their delay.

Non delay and delay in seeking treatment from TB center were cross tabulated with each of the socio-demographic characteristic and looked for any significant

relationship. These relations are presented in Table 22 Among the TB patients' socio demographic factors, there were no association between the level of non delay and delay with age, gender, marital status, high education attainments, occupation and also family monthly income.

Table 22 Distribution of Myanmar migrants TB patient's delay by ***Socio-demographic factors.***

Characteristic	(n)	Non-Delay Number (%)	Delay Number(%)	χ^2	p-value
Age (Years)					
15-34	(118)	32(27.12%)	86(72.88%)		
35-56	(39)	13(33.30%)	26(66.67%)	**0.554**	**0.457**
Gender					
Male	(90)	24(26.67%)	66(73.33%)		
Female	(67)	21(31.34%)	46(68.66%)	**0.411**	**0.522**
Marital Status					
Single (Unmarried/Divorced/ Separated/Widowed)	(58)	14(24.14%)	44(75.86%)		
Married	(99)	31(31.31%)	68(68.69%)	**0.921**	**0.337**
Highest Education Attainments					
Illiterate	(15)	7(46.7%)	8(53.3%)		
Basic education (literate/primary /middle/others)	(125)	35(28.o%)	90(72.0%)		
High education (high school/collage)	(17)	3(17.6%)	14(82.4%)	**3.414**	**0.190**

Table 22 Distribution of Myanmar migrants TB patient's delay by ***Socio-demographic factors.*** (cont.)

Characteristic (n)	Non-Delay Number (%)	Delay Number(%)	χ^2	p-value
Occupation				
Sea food processing (102)	28(27.50%)	74(72.55%)		
Others (55) (General/Factory/ small, temporary job/ jobless now**)**	17(30.91%)	38(27.45%)	**0.209**	**0.648**
Family Monthly Income (Bahts)				
Low (2000-5859)	31(30.69%)	70(69.31%)		
High (5860-20000)	14(25.00%)	42(75.00%)	**0.571**	**0.450**

4.6.2 Association between the Availability factors of Myanmar migrants and their delay.

The analyzed data in Table 23 significantly revealed that TB patients received information of TB diseases and its treatment course from hospital doctors and staffs. Among total respondents, 71 patients got this information from mentioned source and 86 patients did not get it. So, Higher percent of patient without getting information (77.91%) had delayed more than that of patients with this information source(63.38%). This is only one information factor that associated with patient's delay (p valued =0.045)and had weak relationship between them. However, there were no association between the other source of information factors and patient's delay. Although there was no relation between the patient's delay and source of information from employer ,patient got information from this source(62 %) were less delayed than that of without information group.

Similar to other Table reverse findings, there were some findings with higher percent of patients learned about TB center and services, from hospital doctors (74.70%) were more delayed than that of other without this information. Such kind of findings may related to one or more factors were confounded for patient's delay. As review to Table 16 findings with economical accessibility to TB center treatment. This table showed that nearly 100% of the respondent's financial support was their own expense and more than half of TB patients had no chance to get their daily allowance when they came to TB center appointment day. These economic factors may be more stronger than information factors for patient's delay.

Table 23 Distribution of Myanmar migrants TB patient's delay by ***Sources of Information about TB.***

	Non-Delay	Delay		
Type of Information/Source	Number(%)	Number(%)	χ^2	p-value
I. TB Center and Its Services				
Employer				
Yes	19(38.00%)	31(62.00%)		
No	26(24.30%)	81(75.70%)	**3.128**	**0.077**
Hospital Doctors and Staffs				
Yes	21(25.30%)	62(74.70%)		
No	24(32.43%)	50(67.57%)	**0.973**	**0.324**
II. TB and Its treatment Course				
Hospital Doctors and Staffs				
Yes(n=71)	26(36.62%)	45(63.38%)		
No (n=86)	19(22.09%)	67(77.91%)	**4.014**	**0.045***
Private Center Doctors				
Yes	6(20.00%)	24(80.00%)		
No	39(30.71%)	88(69.29%)	**1.361**	**0.243**

***statistically significant:** **r value= 0.160 (near 0, weak relation ship)**

Table 24 Distribution of Myanmar migrants TB patient's delay by ***Advice Persons*** **.**

Characteristic	Non-Delay Number(%)	Delay Number(%)	χ^2	p-value
Employer				
Yes	29(26.61%)	80(73.39%)		
No	16(33.33%)	32(66.67%)	**0.738**	**0.390**
Self initiative				
Yes	12(34.29%)	23(65.71%)		
No	33(27.05%)	89(72.95%)	**0.697**	**0.404**

Although there was no relation between the patient's delay and advice persons, in Table 24, it showed that self initiative person had less delayed(65.71%) than that of no self initiative groups. But, patients got advice from employer(73.39%) were more delayed than that of patient without advice from employer. This reverse finding may related to previous explanation in Table 23.

4.6.3 Association between Accessibility factors of Myanmar migrants TB patient and their delay.

A .Physical Accessibility and Patient's delay

According to finding of this study in Table 25, there was not too much different proportion among group of different distance for their delay. In delayed group, there were 71.76% respondents in near distance group (0.5-3.95 km) and 70.83 % of respondents in far distance group (3.96-15 km). Similarly, patient with less convenience score and more convenience score had similar delayed percent. Both of these two factors were not statistically significant associated with patient's delay.

Regarding to traveling time spent, it was seen that when traveling time spent long (31-180 minutes), the percentage of this group more delayed in (80.77%) than that of the group with short traveling time.. Most of the respondent came to TB center with by bus as a common mean of travel . But convenient mean of travel such as on foot ,by taxi ,by factory car ,etc were also used and their percent of delay (63.64%) were lower than that of common mean of travel.

Waiting time to see a doctor is normally a barrier for seeking treatment, this time was grouped into two ; short (5-90 minute) and long (91-180 minutes),There were a little higher delayed proportion in short waiting group than that of long waiting group. Half of the respondent perceived that they have enough free time when they took leave from work. Nearly 80% of the respondents thought that their waiting time was appropriate. Therefore, long waiting time was not too much problems for them and had proportion of delay (68.18%) were lower in this study . None of physical accessibility to TB center and patient's delay was statistically significant relation.

Table 25 Distribution of Myanmar migrants TB patient's delay by ***Physical Accessibility Factors to TB center.***

	Non-Delay	Delay		
Characteristic	Number(%)	Number(%)	χ^2	p-value
Distance (Kms)				
Near(0.5-3.95) Kms	24(28.24%)	61(71.76%)		
Far (3.96-15) Kms	21(29.17%)	51(70.83%)	**0.017**	**0.898**
Traveling Time				
Short (5- 30) minutes	35(33.33%)	70(66.67%)		
Long (31-180) minutes	10(19.23%)	42(80.77%)	**3.383**	**0.066**

Table 25 Distribution of Myanmar migrants TB patient's delay by ***Physical Accessibility Factors to TB center***. (cont.)

Characteristic	Non-Delay Number(%)	Delay Number(%)	χ^2	p-value
Mean of Travel				
Common (Bus , motorcycle)	37(27.41%)	98(72.59%)		
Others (on foot, taxi , factory car)	8(36.36%)	14(63.64%)	**0.742**	**0.389**
Waiting Time				
Short (5-90) minutes	24(26.37%)	67(73.63%)		
Long (91-300) minutes	21(31.82%)	45(68.18%)	**0.555**	**0.456**
Physically Convenience				
Less Convenience (Score 0-2)	25(28.09%)	64 (71.91%)		
More Convenience (Score 3)	20(29.41%)	48(70.59%)	**0.033**	**0.856**

B. Economically Accessibility and Patient's delay

As review on Table 16, most of the respondent were financially self supported (93.6%) and 80% of them perceived that expense for TB treatment was not a burden for them. Regarding the relationship between economically accessibility and patient's delay; above finding reflected that more expense group were less delayed than that of normal expense group and also burden group were less delayed than that of without burden group in Table 26. However, Patient's delay (71%) was nearly same among patient whose daily allowance had deducted or not by employer in this Table. all of economically accessibility factors to TB center and patient's delay were not statistically significant.

Table 26 Distribution of Myanmar migrants TB patient's delay by ***Economical Accessibility Factors to TB center.***

Characteristic	Non-Delay Number(%)	Delay Number(%)	χ^2	p-value
Overall money expense				
Normal (30-74 bahts)	32(25.81%)	92(74.19%)		
More (75-1070 bahts)	13(39.39%)	20(60.61%)	**2.353**	**0.125**
Financial Support				
Self	44(29.93%)	103(70.07%)		
Others	1(10.0 %)	9(90.0%)	**1.819**	**0.283**
Expense is a burden for you				
Yes.	12(40%)	18 (60%)		
No.	33(25.98%)	94(74.02%)	**2.331**	**0.127**
Employer deduct payment whenever go to TB center				
Yes.	24(28.24%)	61(71.76%)		
No.	21(29.17%)	51(70.83%)	**0.017**	**0.898**

C. Socio cultural Accessibility and Patient's delay

As reviewed to Table 17 demonstrated that 51.59 % of respondents came to TB center by themselves and there were 72.84% of this group had delayed in Table 27. Among the study population, only 7% had legal constraint and but 54.55% of them were delayed. Which was lower than that of patient without legal constraint (72.60%). In Table 17, language barrier problem and changing work because of TB problem had only 8.28 % and 5.1% of respondent respectively. Among them, 46.15% of language barrier group and 87.5 % of ever changing work because of TB group had delayed in

Table 27. Percent of patient who need or no need permission from employer to go to TB center were same in delay category. However, all of socio-cultural accessibility factors to TB center and patient's delay were not statistically significant.

Table 27 Distribution of Myanmar migrants TB patient's delay by ***Socio- cultural Accessibility Factors to TB center.***

	Non-Delay	Delay		
Characteristic	Number(%)	Number(%)	χ^2	p-value
Accompany Person				
No one	22(27.16 %)	59(72.84%)		
With others	23(30.26%)	53(69.74%)	**0.185**	**0.667**
Any legal constraints to go TB center				
Yes.	5(45.45%)	6(54.55%)		
No.	40(27.40%)	106(72.60%)	**1.631**	**0.202**
Any permission from employer to go to TB center				
Yes.	27(27.84%)	70(72.16%)		
No.	18(30%)	42 (70%)	**0.085**	**0.771**
Ever change work because of TB				
Yes.	1 (12.5%)	7(87.5%)		
No.	44 (29.53%)	105 (70.47%)	**1.077**	**0.299**
Any language barrier when go to TB center				
Yes.	7(53.85%)	6(46.15%)		
No-	38(26.39%)	106(73.61%)	**4.396**	**0.052**

4.6.4 Association between suffering symptoms and Patient's delay.

Table 28 Distribution of patient's delay by ***Asymptomatic and symptomatic Myanmar migrants TB patient.***

	Non-Delay	Delay			
Characteristic	Number(%)	Number(%)	χ^2	p-value	r value
Asymptomatic	**16(69.57%)**	**7(30.43%)**			
Symptomatic	**29(21.64%)**	**105(78.36%)**	**22.049**	**0.000***	**0.375****

***statistically significant: ** r value (near 0, weak relationship)**

There were main two groups for asymptomatic and symptoms among study population. Table 28 indicated the relationship between these groups and patient delayed category. There was a big different between in percent of delayed person in each group of respondents. More than three fourth of symptomatic patients had delayed and it was more than two time higher than that of asymptomatic patients. This reverse finding may need to know about delayed person already got symptom or not. In this study, these two factors are statistically significant with p value 0.000 and weak relationship between them.

As reviewed on Table 29, percent of delay between patient with or without persistent cough was not much different in delay category. Similarly, delayed percent of patient with or without chest / back pain as well as patient with or without cough up sputum were not much different within each group. .But most of the percent in each group were reverse finding. As similar as previous table, it may need to check for delayed person already got these symptoms or not. In this study, these three common factors are not statistically significant .

Table 29 Distribution of Myanmar migrants TB patient's delay by ***first notice symptoms among symptomatic TB patient.***

Characteristic	Non-Delay Number(%)	Delay Number(%)	χ^2	p-value
Persistent Cough				
Yes	8(14.04%)	49(85.96%)		
No	21(27.27%)	56(72.73%)	**3.385**	**0.06**
Chest /back pain				
Yes	11(17.74%)	51(82.26%)		
No	18(25.00%)	54(75.00%)	**1.035**	**0.309**
Cough up Sputum				
Yes	10(15.15%)	56(84.85%)		
No	19(27.94%)	49(72.06%)	**3.231**	**0.072**

4.6.5 Association between Knowledge level and Myanmar migrants TB patient's delay.

The result from Table 30 indicated the relationship between respondents' knowledge and patient's delay. In delay category, nearly equal percent of respondents were noted as good and poor level of knowledge about TB disease and spread. However, knowledge level of disease prevention and treatment percent in delayed category, poor group was lower than that of good knowledge group. Overall result revealed that there was percent of delay (72.84%) among poor level group, which was higher than that of good knowledge level group. So, patients with good knowledge were less like to be delayed. However, overall knowledge level of patients and patient's delay were not statistically significant.

Table 30 Distribution of Myanmar migrants TB patient's delay by ***Knowledge level***

Characteristic	Non-Delay Number(%)	Delay Number(%)	χ^2	p-value
Knowledge of TB and spread				
Poor(0-4)	24(29.27%)	58(70.73%)		
Good (5-8)	21(28.00%)	54(72.00%)	**0.031**	**0.861**
Knowledge of Prevention and Treatment				
Poor(0-3)	32 (32.99%)	65(67.01%)		
Good (4-6)	13(21.67%)	47(78.33%)	**2.324**	**0.127**
Overall Knowledge				
Poor(0-7)	22 (27.16%)	59(72.84%)		
Good (8-14)	23(30.26%)	53(69.74%)	**0.185**	**0.667**

4.6.6 Association between Perception level and Myanmar migrants TB patient's delay.

Table 31 Distribution of Myanmar migrants TB patient's delay by ***Perception level.***

Characteristic	Non-Delay Number(%)	Delay Number(%)	χ^2	p-value	r value
Perception on severity of TB Disease					
Low (8-11)	26 (40.63%)	38(59.38%)			
High (12-15)	19(20.43%)	74(79.57%)	**7.562**	**0.006***	**0.219****

Table 31 Distribution of Myanmar migrants TB patient's delay by ***Perception level.*** (cont.)

Characteristic	Non-Delay Number(%)	Delay Number(%)	χ^2	p-value	r value
Perception on benefits of TB treatment					
Low (8-15)	25 (37.88 %)	41(62.12%)			
High (16-18)	20 (21.98 %)	71(78.02%)	**4.730**	**0.030***	**0.179****
Overall Perception (Scores)					
Low (17-27)	31 (41.89%)	43(58.11%)			
High (28-33)	14(16.87%)	69(83.13%)	**11.981**	**0.001***	**0.276**

***statistically significant: (r values are near 0 ,weak relationship)**

The result from Table 31 indicated the relationship between respondents' perception and the patient's delay. Over all result revealed that there were much different percent among low(58.1%) and high(83.1%) level of perception in delayed category. High level of perception had more delayed.

In each perception of delay category, more percent of respondents were delayed in high level group than that of low level group at perception on severity of TB disease. Similarly, perception on benefit of treatment, high level group was more delayed than that of low perception level group. All of these reverse findings in overall perception and each group showed that one or more factors were confounded for patient's delay with high or low perception. It may related to Table 10, main reason for patient's delay period to TB center treatment was waiting for their health insurance cards (52.68%).

In this study, all of perception groups are statistically significant with p value <0.05 and weak relationship between patient's delay.

4.6.7 Association between Main reason to come to TB center and their delay

Table 32 Distribution of Myanmar migrants TB patient's delay by ***Main reasons to come to TB center.***

Characteristic	Non-Delay Number(%)	Delay Number(%)	χ^2	p-value
Come by self initiative	13(30.95%)	29(69.05%)		
(i) Can not work effectively				
(ii) Suffering symptoms more				
(iii) Others (come as minor illness)				
Detected by labor registration as having TB	24(23.53%)	78(76.47%)		
Urge from others (Friend, family, neighbors, etc)	8(61.54%)	5(38.46%)	**8.294**	**0.014***

***statistically significant : (r) = 0.224 (near to 0, weak relationship)**

Majority of main reason to come to TB center was related to that disease was detected by labors registration (64.97%) in Table 11. In Table 32, among this group, 76.47% had already delayed and it was higher than that of others reason groups. In this study, these main reason groups are statistically significant with p value <0.05 and weak relationship between patient's delay.

4.7 Some suggestion from the respondents

According to the results from additional opened question, about 50% of the respondent in this study population gave comment and suggestion on both positive and negative aspect concerning to TB treatment. Positively, they really appreciated about

30 bahts project and social security system for migrants. One TB patient said that she did not know about the word TB she only know TV (television),but she is now under proper treatment due to health screening programme. The most frequent suggestion was concern about their health seeking problems and work related financial and social problems.

There were about 30% of respondent said that they would like to know proper knowledge about TB disease prevention and early symptoms as well as treatment course and side effect of drugs. They want to get work place TB control programme, which was practiced in some factory. They believed that this is the only way to over come the several problems related to TB treatment of Myanmar migrant TB patients. Some of the respondent suggested about healthy living and behaviors during and after treatment of TB. As review on their difficulties with reasons, half of the respondent has no chance to get daily allowance during TB center appointment day. Therefore, they suggested that chronic disease person with physical and financially weak like as TB patient need appropriate support and kind arrangements from employers. It did not mean that they did not want to be opportunists, just only to get mutual understanding for proper treatment with appropriate work place and support. Their final intention is to be a healthy and productive worker for healthy workplace as well as they want to serve great effort for their owner benefits. Some of the TB patients want to get referral system for non-interruption treatment for them and it is suit for their migration nature, complete cure (treatment relay card system) and for financial aspect (30 bahts for TB in every where).

CHAPTER 5
DISCUSSION

The phenomena of migration presents major difficulties to TB control programme. As a group ,migrants are particularly vulnerable to a wide range of communicable infections such as tuberculosis and HIV. They often encounter considerable difficulties in accessing health care and adhering to prescribe treatment regimens. The high influx of migrants in SamutSakhon area is certainly due to economical reason. The work force, for the huge number of sea food factories and big export of sea food to western countries , are covered by the migrants workers. This discussion was related to the results of patient's delay in tuberculosis center treatment among Myanmar migrant, SamutSakhon Province. A retrospective descriptive and analytic cross-sectional study where the data was collected through structured questionnaires by interviewing method. There were total 157 new TB patients visited to SamutSakhon General Hospital and Srivichai V Private Hospital, between January and February 2005. According to the objective of study, this cross sectional study with results of patient's delay are discussed in Six sections. Which include

5.1 Socio-demographic characteristic of study population.

5.2 Period of patient's delay in seeking treatment from TB center and reasons for delay.

5.3 Enabling factors, including availability of TB center and services and also accessibility to TB center.

5.4 Knowledge about TB disease and its treatment

5.5 Implication for awareness of having disease before coming to TB center

5.6 Perception about severity of TB and benefit of TB treatment

5.1 Socio-demographic characteristic of study population.

The socio –demographic characteristic of respondents were homogenous in both delay and non delayed category. Three fourths of the respondent were young working age group(15-34 years). Among them, over 70% were belonged to delayed category. This has highly impact to the family ,society and work place. The increasing trend of TB among younger age group was thought to be linked with increasing number of young migrants population. It is evident that other survey showed that common age of migrant had ranged between 13 to 30 years (Awatsaya Panam et al., 2004)and 78.7 % of study migrant population were age between 15 to 30 years (M.T Benner, 1997). Finding from this migrant group study is contrast with other native group studies. One study at TB zonal center II, Thailand, (T.B Sulaik , 1994) reported that patient's delay in similar age group was only 16.6% to 33.3%. But another study at Longan Province, Vietnam (L.T liem, 1999)found that young age group (15-34 years) were 65.4% delayed , it is nearly same as this study. But, her target population were not migrant and they were only local native patients admitted to TB center.

Concerning the gender, the 157 respondents were nearly 3:2 ratio of male and female. But the association between gender and patient's delay were not too much gender different. This finding reflected to the reality of migrant workers, both male and female were came to here only aim for their income generating job; worked on same situation and status. Therefore , suffering disease and delayed period were similar without too much gender difference. Which was not similar to previous studies, it had female more delayed than male in local TB patient's delay study at TB zonal center II, Thailand , (T.B Sulaik, 1994) and also another studies of Philippine and Vietnam(L.T.Liem, 1999).

About marital status of the respondents, 63 % were married, it is similar to other migrant study in Thailand, about 60 % married in migrants (M.T.Benner, 1997). The rest were grouped as single, and this group had thought no body to share their health problems. But regarding on marital status with patient delay category ,there was not too much different between these two groups in this study.The percent of delay in married (68.69%) was lower than that of other studies (71.6%) in Vietnam. Most of the migrants (65.61%) stayed as in group of at least 4 members in one

living apartment and so single respondents got also social support from their friend or relatives. Another reason may be due to less family burden.

When review on education status, this study indicated that basic and high education level had increased percent of delay than that of the others illiterate level. It was big different and reverse findings from other studies. Safer et al (1979), and T.B Sulaik (1994) had found that the delayers were more likely to be in poor educated or non at all. For this migrant group study, such kind of vicious cycle of developing countries phenomena was not applicable. This reverse findings suggested that one or more factors might be confounded with patient's delay.

As an over view on this migrants group ;there were be two assumptions. First one was that more or less migrant people had already infected before they come to this area and second one was that any level of education in migrant TB patients had no chance to seek TB center treatment. For first assumption, high percent (64.97%) of total respondent had reason to come to TB center with the account of only labors registration TB screening programme. After this programme ,they firstly knew this disease and had started to treat. So, regardless of their previous education attainment in their home country, every group may be delayed. It was evident that almost all of group had high delay percent. First assumption was also evident in a previous study of TB in foreigner from Asian and African countries ; Toyota.E (Japan, 1993). That study was conducted from 1986-1991 at Nakano Chest hospital, Tokyo and the findings supported that many of the foreign groups were infected in their origin country and reactivated before and after arrival to Japan.

For second assumption, higher percent was noted as account for waiting health insurance card (52.68%) was main reason in delay seeking treatment from TB center. This card was a vital for Myanmar migrant workers. Without this card, they have less chance to visit to heath care areas and pay expensive health care services charges. This insurance card can be used as an evident to local police and also card holder need to pay only 30 bahts per visit for health care services. After health screening programme, most of workers waited for this card at least one month. So, regardless of education level, income, advice person, accessibility, availability factors, their knowledge, perception on TB and their suffering symptoms; every group in each level

may be delayed with high percent. So, above two assumptions can explain to reverse findings, which were not same as other studies.

As reviewed on occupation, nearly 65% of total respondents were sea food processing workers. Among them 72.55% had delayed, nearly three time higher than that of other occupation groups. As reviewed on occupational aspect, most of the migrant workers were hard working groups and worked in day and night shifts. As an incentive about per Kg allowance, and over time pays for job demand; which promoted long hard working time. This condition and cold workplace may lower defense mechanism of the body as well as making infection more easily or reactivation of TB. Nearly 70% of TB patients had delayed in low family income with 2000-5859 bahts. But high family income group had more delay (75%) than that of low income group. As compare to other study , the poor account for 81.3% of delay group while only 6% in high income group (L.T.liem,VietNam, 1999) and TB is a disease of poverty (Castillo, 1985) were also noted. This study finding was opposite from those previous ones, it can be explained as above two assumptions. As reviewed on over all money expense and burden of expense for treatment were not too much different in each groups of delayed category. All these findings were also reverse findings and income and financial expense for treatment were not statistically significant to patient's delay. It is also evident that, any TB patient with health insurance card can visits to TB center and only need to pay 30 bahts per visit.

This migrant TB patient's delay study seem still to be controversial findings when a number of other local and native TB patient's delay studies strongly disagreed. There was no statistically significant association between such all of socio-demographic factor and patient's delay .

5.2 Period of patient's delay in seeking treatment from TB center and reasons for delay

In this study, the proportion of patient's delay in total was 71.34% ,which comparable to the prevalence rate of delay among Thai native TB patient was 73.1% in TB zonal center II, Thailand, (T.B Sulaik , 1994). According to grouping, a short delay group(more than 30 days up to 60 days) was 29.30% and long delay group (more than 60 days) was 42.04% and average delay period was 82 days. In Myanmar,

a study (T.C.Tin, 1996)showed that duration of illness before visiting TB center treatment ranged from one day to more than 181 days and majority was 55% in the delay period of one to 30 days. As view on migrant aspect compare, Fairfield Hospital, Victoria, Austria study (1991-93) showed that TB treatment started more than 30 days among South East Asia born TB patients is 65% and average delay period was 50 days. So, this study had comparatively higher percent of delay and longer patient's delay period. Regionally, Vietnam study about patient's delay at longan Province(1999), it was demonstrated that proportion of 69.8%. Main reason for delay among respondents had wait for their health insurance card. In this study, patient with this reason and patient's delay were the statistically significant (p=0.014). But weak relationship showed that there were some other factors contributing to delay other than this reason.

This study was different from a study in Japan (Iwassaki, 1268 TB patients survey, 1981),its main reason was related to patients thought that it was a beginning stage of their illness. Concerning about seeking TB treatment, this study showed 65% patient knew TB by labor medical check up and then they got treatment .It was different from Vietnam study, in which neighbors were mainly advice to seek TB treatment. Concerning about seeking treatment during delay period, near by drug stores and don't think as important reason were most common findings in this study. In Thailand study (Korenko, 1990)patient went to government hospital for general treatment when tey notice first symptoms..

5.3 Enabling factors including availability of TB center and services and accessibility to TB center

(A) Regarding availability of service , the study revealed that most of the respondents (86.62%) knew at least one TB center and that center from private or government hospital was linked to their social security system. Almost all of respondents reported that the location and transportation were convenient.

Sources of information was an important factor to help patient in seeking treatment from TB center.Regarding information about TB center and its services, around half of the respondent in the study received information from hospital doctor and staff and fewer received from their employer. The finding was different from the

study with Mexican migrant farm workers , that two-third of them received TB information from TB education programme presented by community outreach workers and a few of these had heard previous years as well as from fellow migrant workers, friends ,family members, nurses and doctors. For source of information about TB disease and its treatment information, Myanmar migrant's received mainly from hospital doctors and staffs,it was significantly associated with patient's delay (p=0.045). But weak relationship showed that there were some other factors contributing to delay other than this kind of information source. Other findings in Thailand(T.B Sulaik, 1994) study showed that longer delay was noted among those who were never exposed to any information, but the resource persons were different and Thailand native TB patient received more information from friends and relatives.

(B)Regarding of accessibility to service, the result of the study reviewed as follows:

(i) Physical accessibility, It revealed that three fourths of near distance from TB center group had delayed, it was nearly equal to delay with patients in far distance group (4 km and above). Compare to previous study (L.T.liem, Vitenam, 1999), delay group were found in far distance from TB center. But Thailand (T.B Sulaik, 1994) study showed that distance was longer range from 10 km to 350 km. Those studies did not mention about patient delay and distance factors. Iwasaki (1981) report in Japan and Toman (1979) explained that distance from medical facility was a common factor for delay. In this study, the maximum distance was only 15 km, and public transportation and hospital location were easy to access. So, regarding distance factor, there was not statistically significant association between it and patient's delay.

Mean of travel, Traveling time and waiting time were not statistically significant with patient's delay. As compare to patient's delay study in TB Zonal center II, Thailand; where mean of travel was by bus, it was same mean of traveling in this study. Whereas in other studies of Thailand and Vietnam, short traveling time group(5-30 minute)were less proportion of delay than that of others traveling time group.It was same as in this study. Waiting time to see the doctor is normally aggravated to patient's delay. In this study, long waiting time group was more

delayed than short waiting time group. As review on convenience questions about appropriate waiting time and enough free time to come to TB center, nearly equal half (49.68%) of the respondent had positive and negative responds. Most of the respondents thought that they have enough free time during their leave day from job and so not too much problems for waiting time . It was also evident that physical convenience score between two groups in delay category were nearly equal percent.

(ii)Economic accessibility: In this study, more than half of the respondents spend 30-50 bahts for overall money expense to go to TB center. Nearly all of the respondents used their own money for overall financial support of TB treatment. Majority of patient with their family monthly income were not too much , no chance to get daily allowance during TB center appointment days and no other additional financial support for treatment but about 80 % of the respondents thought that treatment expense were not burden for them. Generaly,the expense is positively related to delayed period; the patient with higher overall expense to TB center was greater delayed than that with lesser expense. In this study, nearly 75% of normal expense group had delayed more than that of more expense group .This reverse finding was no significant association with patient's delay.But,it showed that one or more factors were confounded for patient's delay. When review on patient's delay study in Thailand, 200 TB patients' factors related to behaviors ,Bangkok Chest clinic (Korenko, 1990), it showed that income and expense were mainly associated with patient's delay. As review from migrant point, one Japan study showed that still necessary to financial guarantee for worker's medical treatment (Kimura T et al, 1989). This study area had health insurance system and 30 bahts payment policy, it facilitates to migrant worker's easy access to medical care but employer daily payments dudctions may be confounding factors or negative impact to accesibility factors.

(iii) Socio-Cultural accessibility: There were no accompanying persons when patients go to TB center, i.e about half of the respondents came to TB center by themselves. Because of the labor registration law and health insurance system, only a few respondents were noted with legal constraints to go to TB center. Similarly, arrangement with the mother language translators (3 in private and 1 in government hospital), only small percent of respondent had language barrier problems. It may be

due to long stay in this area and quite familiar with Thai language. About 60% of the respondents were need to get permission to go to TB center and only 5% of the respondents were changed their job due to TB. As compare to Kunii O,Nomiyama K study showed at least one or two barriers about language problems with time consuming medical care, immigration law, reluctant to accept migrant patient were still existing status of medical care for foreigners in Tochigi Prefecture, Japan (Survey at all clinic and hospital, 1993). But the current condition for Myanmar migrant TB patient was totaly different from this Tochigi condition. This point was a great chance to continue implemention of TB prevention and control programme among migrant population in this area. However, the statistical test showed no significant association between all accessibility factors and patient's delay.

5.4 Knowledge about TB disease and its treatment.

In order to assess the knowledge level of the respondents, total 14 questions were asked and classified into 3 groups. For descriptive purpose, most the respondents were found with poor overall knowledge level (51%). However ,analysis with patient delay, only poor and good level were classified. Firstly, these two level were interpreted with their knowledge about TB disease and spread. Nearly equal percent of poor and good level had delayed. But knowledge level on prevention and treatment with delay were different percent. Good knowledge level group's delay percent was relatively higher than that of poor level group. It can by explained by prior infection before came to this area (first assumption). As review to overall knowledge and patient's delay studies, poor knowledge level group had more delayed (72.84%) than that of good knowledge level group. It similar with patient's delay study in Thailand(1994). But in Vietnam study (L.T.Liem. 1999), it had reverse finding about good knowledge level (75.9%) were more delayed. Nevertheless, all studies showed that there was no statistically significant between knowledge and patient's delay.

When reviewed on collected data, patients with not sure answer were very low percent (5-12%) and patient with don't know percent is quite high (28-68.15%).Highest percent of don't know answer related with three week anti TB treatment period prevent transmission. Further research need to clarify this issue. As a migrant worker study ,Mexican migrant TB patients had good knowledge about

disease spread and etiology because they had chance to attend a TB education programme taught by bilingual health promoter.(Jane E. Poss, the meaning of TB for Mexican migrant farm workers in U.S, 1998). Therefore , health education about knowledge may not be superficial or general and then need to use relevant method , right timing of health education to migrants .

5.5 Implication for awareness of having disease before coming to TB center

The common first notice three symptoms were cough up sputum, chest or back pain and persistent cough. Among them, cough up sputum in nearly half of the respondents. and round about 40% of the respondents noticed chest /back pain. Persistent cough had notices only in 36.31% of the respondents. Others symptoms such as weight loss, general weakness and evening feverish were also firstly noticed, and had only between 33 to 7% .Which were not same as other patient delay study in Thailand (T.B Sulaik,1994) and also case finding and diagnosis method of I.U.A.L.D (1982). Their most often motivate symptom was persistent cough and it motivate a patient to seek medical helps. But these first notice symptoms of this study were not statistically significant with delay.

Among total Myanmar migrant TB patients, 28 respondents suffered no first notice symptoms. Those worker who were apparently asymptomatic with suspicious chest X ray findings discovered during a routine work place medical check up, referred to TB center for treatment. Survey on TB patient's delay at two rural health unit and one health station , Phillipine (Sarmiento Valeza et al, 1990) pointed out that symptomatic patients were more easily to make diagnosis and thus get sooner treatment than asymptomic patients. About this study,showed that reverse finding and symptomatic patients had two time more delay than that of asymptomatic patients(30.43%). This finding can be explained by prior infection before migration (first assumption).In this study, patient with or without symptoms and patient's delay were the statistically significant associated between them (p=0.000) .But weak relationship showed that there were some other factors contributing to delay other than symptoms.

In this study,employers played an important role and majority percent (69.43%) in advising to treat TB and urge to go TB center. Self-initiative and private

doctor advice had also got only in 22% and 11% of TB patients, respectively. On the other hand very small percent of the respondents (0.64%) had got advice from their neighbors and also from previous TB patients. Fewer amounts of respondents (5-7%) had advice from friends at work and also from family members. Other study in Thailand in which they only got advice from their neighbors and friends. As review on this study, finding showed that patient's delay percent (73.39%) had more in respondent who got adive from employer.This is the one point to think about the employers' basic health education level and way of advice to workers as well as how they encourage and support the patients to come to TB center conveniently. So,employer should be focal persons for treatment seeking steps and it was related to work place TB control programme implementation. (Appendix.B Table 33)

5.6 Perception on severity of TB and benefit of TB treatment

A. Perception on severity of TB

Regarding descriptive review on the perceived severity of TB disease, result revealed that only 66.88% of respondents had moderate level perceived and it was nearly 3 times higher than that of low level.Only 10% had high perception. As review on each question, the least percent (34.3%) of negative question with disagree answer for person having TB may discriminate you from society was observed in this study. It was as same as the finding in Vietnam study (L.T.Liem,1999). It means they regard was TB is socially unacceptable in society , also believed by themselves TB as a socially discriminated, or social stigma disease.They did not like other people knowing they had TB. It may precipitated to dropout of the active TB cases from their workplace to unidentified areas and promote disease spread. So, most of the health education programme should concentrate on TB patient's wrong perception and miss believes. Over 75% of the respondents perceived that TB is a deadly infectious disease and the percent of disagree perception on negative question about TB is not permanently cured by drug alone was 56.05%.It mean that patients strongly believed on diseases severity and had quite confidence on treatment. This fair result as similar as Vietnam study,in which most of the respondents expressed confidence in ability of drugs to cure TB (76.8%). Ortega (1991)study, only some of the

respondents thought of TB affecting the performance of their daily activities. But in this study only showed that, 42.04% of the respondents perceived that suffering of TB could partly loose income.

As association with delay factors, 79.57% of high perceived on severity of TB diseases had delayed and it was more percent than low level .This reverse finding can be explained by first assumption and these were statistically significant with p-value 0.006. But weak relationship showed that there were some other factors contributing to delay other than such kind of perception.

B. Perception on benefit of TB treatment

Regarding descriptive review on the perceived benefit of treatment, result revealed that only 43.31% of respondents had moderate level perceived and it was nearly one and half time higher than that of low level. High level of perception had 30% in this study.

When review on each question,almost 77.7% of the respondents perceived that irregular taken drug will lead to drug resistant. This results on benefit of treatment had good point for disease cure and less chance to MDR-TB. Obviously, 85.35% of respondent already perceived that the sooner start treatment of TB ,lesser expense and also in another perceived idea with early TB treatment can speed up recovery. These best percent of perception favors to over come economic barriers and also facilitates the complete cure.However, over 50% of negative question with disagree answer for delayed in TB treatment may not lead to spread of TB was observed in this study.This only half of respondents' right perception was not enough to reduce TB spread and delay factors.It may lead to facts for delay in other risk groups.

As association with delay factors, 78.02% of high perceived on benefit of treatment had delayed and it was more percent than low level and then they were statistically significant with p-value 0.030. This reverse finding can also be explained by prior infection before migration (first assumption).

C. Perception Level

Regarding descriptive review on perception of this study, nearly 70% of respondents had moderate level of perception.High perception was only 14.65% and

also only 16.56% was low level of perception. Similarly, Vietnam study had its fair level of perception was highest percent (76%) among the respondents. As association with delay factors, high level of overall perception(83.13%)were more delayed than that of low level.It was also reverse finding and it can also be explained by first aasumption. It was statistically significant with p=0.001. But ,weak relationship showed that there were some other factors contributing to delay other than such kind of perception. As review to perception and patient's delay studies in Vietnam (L.T.Liem..1999) it had also reverse finding, about good perception level(83.3%) were more delay.But ,the association was not statistically significant. Other studies in Thailand (Korenko,1988), which noted that significantly related and but no reverse findings between patient's delay with perceived severity of TB and perceived benefit of treatment and another study (T.B Sulaik, 1994) showed that their more delayed group were moderate level of perception and no significant association to patient's delay.

CHAPTER 6
CONCLUSIONS AND RECOMMENDATION

6.1 Conclusion

TB is a devastating disease ,killing over the million people a year in South-East Asia region and infected over a third of the population. The impact of a well organized case –finding and treatment programme to reduce the magnitude of TB problem is quite clear. The duration of infection as well as the morbid status of TB patient can be shorten by early case detection. Therefore, the number of persons infected from source and number of patients and also tuberculosis death can be reduced. Delay factors serves as the only measurable and practical indicators for the coverage of case detection.

The present study titled "Patient's delay in TB center treatment among Myanmar migrants TB patients" was planned to ascertain the period of patient's delay. The study areas were Mahachai, Kratumban and Ban Paew areas, SamutSakhon Province, Fourth regional TB control area, Thailand. An endeavor has been made not only to find out the period of patient's delay but also to investigate Predisposing Factors (age, gender, marital status, occupation and knowledge), Enabling Factors (family income ,education level, accessibility and availability of TB center and treatment.) Need Factors (perception about TB and treatment) among Myanmar migrant TB patients . According to the conceptual framework, the objectives of this study need to identify the possible relationship between these independent factors and patient's delay among study population. Data were collected at planned hospitals, but snow –ball technique was used for easy to reach target population and time saving purpose. As reviewed on previous malaria study experiences in Myanmar migrants (M.T.Benner, 1997) researcher focused and planned to overcome some existing difficulties about factory owner understanding, social and ethnic language barrier, etc. Then, the researcher recruited and trained locally available Myanmar interviewers who were familiar with research activities ,good command of Thai and ethnic

language ,and also who know very well to find out the places and factories with TB patients. After on job training for one week period, the researcher set up the aim of " Without any disturbance to TB patient ,got complete information about their delay."

After checked about migrant TB patients' lists , trained interviewers were divided into static and mobile teams . The static team were responsible to collect data at respective hospital out patient department and also checked and cleaned the data. The mobile team (i.e ***Mobile for Migrants***) were set up with the researcher ,one coordinator, interpreter and interviewers. This team contacted and hold advocacy meetings and also cooperated with responsible official, local NGO, employers ,supervisor, local Myanmar migrant workers at different areas. Mobile team were learned about migrant workers' real working status and also their living status. During special TB center day (Thursday),two teams were combined and effectively collect the data from many migrants TB patients at hospitals.

Regardless of working time and hours, both groups were worked energetically and successfully done data collection within one month period. Problems for data collection occurred in some factories where the manager were afraid of being named work place with TB. However, best cooperation of AIHD official, local health official, private hospital ,factory employer ,energetic interviewers and persistent researcher were over come many difficulties including financial, language ,traveling and also problems to find out migrant TB patients. After three weeks of data entry , analysis and interpretation , the conclusions can be present as follows:

1. For general information, out of total 157 respondents, the average age of Myanmar migrant TB age was 30 years ranging widely from 15 to 56 years. More than three fourth of the respondents belonged to young working age group. In this study, male female ratio was nearly 3: 2 and most of them were married. Their highest education attainment was mainly primary and middle school level. The majority was seafood processing workers with common family monthly income between 3001 to 7000 bahts .Most of the TB patient stayed in a group of one or four persons in one living apartment. Non of the socio demographic factor of TB patients and patient's delay was statistically significant.

2. Concerning patient's delay seeking from TB center treatment, 71.34% of total patient were delayed . Among them short delay (more than 30 days to 60 days)

was 29.3% and long delay (more than 60 days) was 42.04%. Patient's delay average period was 82 days and maximum delay period was 365 days was noted in only four TB patients but minimum period was 2 days. Non delay group was only 28.34% of the respondents.

3. Main reason to come to TB center, mostly their TB disease were detected by labors registration process (64.97%) and among this group, 76.47% were delayed. All of main reasons were statistically significant associated with patient delay.(p value=0.014) but the relationship value (r) indicated weak and so there may be others confounding factors to delay other than this reason.

4. Main reason for delay period showed that almost half of them were wait for health insurance card after labors medical check up (52.68%) and it was nearly two time greater than that of other reason with minimal symptoms. During their delay period , majority took medicine from nearby drug store.

5. Concerning enabling factors including availability to TB center, most of the respondent (86.62%) were noticed about their related health insurance hospital. About 92% reported that hospital location was convenient for them. Information about TB center and its services was mainly received from hospital doctor and staffs, secondly from their employer. Similarly, information about TB disease and its treatment course; was mainly received also from hospital doctors and staffs and it was statistically significant associated with patient delay(p value=0.045). but the relationship value (r) indicated weak and so there may be other confounding factors to delay other than this information source. The rest of the availability factors and patient's delay were not statistically significant.

6. Concerning enabling factors including accessibility to TB center were as follows;

(i) Physical accessibility: Most of the respondents stayed 3 km or less distance from their respective TB center and then average distance was 4 km . Minimum 0.5 km and maximum distance was 15 km. Similarly, their traveling time was mostly between 5 to 30 minutes to come to TB center and then their maximum traveling time was 3 hours. Most of the respondent (65.6%) were used public bus for their mean of travel to TB center. About 43.31% of respondents thought that physically convenient

for their TB center treatment. But, high percent (50.32%) of their waiting time at TB center was more than 1 hour to 3 hours and maximum time was five hours.

(ii)Economic accessibility: More than half of the respondents (55.41%) were overall money expense to go to TB center were 30-50 bahts. Nearly all of the respondents used their own money for overall financial support of TB treatment. About 80 % of the respondents thought that treatment expense were not burden for them. But, more than half of the respondents (54.14%) were no chance to get their daily allowance or per Kg allowance when they come to TB center appointment day.

(iii) Socio-Cultural accessibility: There were no accompanying persons when patients go to TB center, i.e about half of the respondents came to TB center by themselves. Because of the labor registration law and health insurance system, only a few respondents were noted with legal constraints to go to TB center. Similarly, arrangement of the mother language translators (3 in private and 1 in government hospital), only small percent of respondent were language barrier problems. It may probably due to long stay in this area and quite familiar with Thai language. About 60% of the respondents were need to get permission to go to TB center and only 5% of the respondents were changed their job due to TB.

None of the accessibility factors and patient's delay was statistically significant.

7. Concerning knowledge on TB disease and its treatment , highest percent of knowledge(62.4%) were found in disease prevention behaviour, treatment course and infection spread to family members. Secondly, higher percent of knowledge(57.96%) were found in etiology cause and route of infection entry. Moreover, maximum knowledge level (14 scores) was found in six TB patients. On the other hand , Poor knowledge level group is 51.59% of the respondents and it was highest among three level of knowledge groups. From the aspect of delay, 72% of good knowledge level in disease and its spread were delayed. and also 78% of good knowledge level in disease prevention and treatment were delayed. Overall delay percent is higher in poor knowledge level (72%) than that of good knowledge level. However, the level of their knowledge and patient's delay was not statistically significant.

8. Concerning perception on severity of TB disease, highest percent of perception (85.99%) was found in “early treatment can speed up recovery from TB.” About 77.% were found in “TB is a deadly infectious disease” and also in “irregular treatment will lead to drug resistant” as higher percent of perception. Maximum perception level was found in one TB patients As review on overall, Moderate perception level group is highest (68.79%) among the respondents. From the aspect of delay, 79% of high level perception on severity of disease were delayed. and also 78% of high level perception on benefit of TB treatment were delayed. Overall delay percent is higher in high level perception group(83.1%) than that of low level perception group. Level of their perception and patient’s delay was statistically significant.(p value=0.001),but the relationship value (r) indicated weak and so there may be confounding factors to delay other than perception.

9. Regarding implication for awareness of disease before coming to TB center, three commonest of first notice symptom were cough up sputum, chest or back pain and persistent cough. 28 TB patients were no experience about first notice symptom and stayed as asymptomatic TB. During routine medical check, only suspicious chest X ray findings were confirmed and referred to TB center treatment. Their employer mainly advised to TB patients to go to TB center. From the aspect of patient’s delay, 73.39% of patient with employer’s advice were delayed and also 78.36% of patients with symptoms were delayed. It was more than two time higher than that of asymptomatic TB patients. This symptom and asymptomatic patients were statistically significant association with patient delay (p value = 0.000) but the relationship value (r) indicated weak and so there may be confounding factors to delay other than this contributing factor.

10. Specific information for patient’s delay were as follows;

Most of the delayed TB patient were married males, young working age group with basic education level. They were mostly sea food processing workers and were low family monthly income about 5800 bahts. They were under cover of health insurance system and were physical , economical and socio-cultural easy access to medical care .But all of them were not statistically significant association with patient delay. The socio –demographic characteristic of respondents were homogenous in both delay and non delayed category.

In brief, many factors contribute to delay from TB treatment, among them : source of information about TB disease and its treatment from hospital doctor and staffs, were significantly associated with patient's delay TB patient's perception , Asymptomatic and symptomatic group, and main reasons to come to TB center were also significant association with patient delay. The last three were reverse findings .and so this migrant TB patient's delay study seem still to be controversial findings with numbers of local and native TB patient's delay studies. All of statistically significant association in this study were weak relationship with patient delay(r value near 0).This means that there is no strong enough to be one direct cause of delay.

As review on first assumption , patients who already infected with TB and minimal symptoms in their home country or before to come to this area and also before medical check up; they were entitled with delay group before this study. No matter of predisposing and enabling and need factors positively affected to them, they were already delayed. It was evident that a 5 year study in southern Alberta, Canada, (1990-1994) with the aim of examine the pattern of TB occurring among immigrants and the interval from arrival in Canada to diagnosis of the disease. That Canada study concluded that health care professionals need to be aware that immigrants from countries with a relatively high prevalence of TB remain risk for the disease for many years after they immigrated.(CowieRL, SharpeJW.). Therefore, second assumption with waiting for health insurance card might be associated factors for such kind of patient's delay problems in migrant population.

As conclusion, it is well understood that information about patient's delay in migrants Myanmar TB patients are still limited and rare. The result might to be as a useful tool for health care providers, health planners and also for new health projects in this study areas or areas with similar characteristic. Policy makers and others related departmental organizations of two countries can elaborate strategies to approach this population. Finally, effective and manageable workplace TB control programme might be target to this group with the aim of appropriate to their working pattern. Therefore, high in TB prevalence rate and spread would be allowed to reduced.

6.2 Recommendation

On the basis of the result of this study, following are recommendations for better improve in disease control and reduce delay period. Moreover, it can be applied to effective prevention and treatment among migrant TB patients and migrant population .

6.2.1 For Individual migrant level

Under TB treatments condition, migrant TB patient should be notice about personal health care with good healthy practice and also benefit of treatment and out come of irregular treatment. The risk of multiple drugs resistant TB (MDR-TB) may be essential knowledge for theoe patients. Let them to share about their previous experience about how they get TB, first notice symptoms as well as what were knowledge about prevention and treatments to their migrant groups or friends at work. The utmost aim is don't be delay like as them and give proper peer education and healthy practice.

Good heath can earn more income and take care about personal heath with own awareness and healthy living style were advised. Early recognition of TB suspected symptoms and timely visit and check at respective health care areas should be strongly recommended for every migrant worker. It may aim no chance allow for patient's delay among migrants. Above continuous health education about healthy practice and risky behaviors should be learn from Myanmar health volunteer and work places heath education programme as well as from hospital doctor ,staffs and translators.

6.2.2 For Family level or Working place level

Strong family, relative or friends social support are still need for migrants in such kind of situation(host country.) and also need to practice preventive measure and healthy life style(house ventilation) and avoid risky behaviors (e.g smoking ,etc) at family level. Early notice symptoms at family level and works place were aim to prevent spread and reduce patient's delay.

As it is a focal point to give health education and proper treatment , friends at work and family members need to encourage the TB patient for complete cure and

support about healthy practice and no need to discriminate at work places. The study suggested that work place focal person and factory clinic should be widely health educated, and need support and also motivation to them. Good cooperation with local hospitals and NGOs may be a great benefit for all.

Work place TB control programme is strongly recommend for this area. Migrant workers should be clearly understand and actively participate in this programme. It is mutually benefit for economic and social aspect of both employers and workers. Generally, biweekly or monthly health talk with their native language including open discussion or Q & A (question and answer) approach should be launched. This will clean up miss concept and mal practice of TB and other diseases' prevention and treatment. Moreover, it promote healthy practice, avoidance of risky behaviors and awareness of TB and so it is one of proper way to reduce the patient's delay.

6.2.3 For Migrant community level

Strong social net work really need for social support and peer health education. The study suggested that, need to reinforce socially oriented workers' union (e.g Yinn Nyein Panne Social Union ,United Social Welfares Group). The migrants group with potential to delay treatment and high risks to TB should be given priority to provide health education about TB. So, they can correctly decide for health care and no chance to get delay. Myanmar health volunteers should be participate in migrant workers' union and strengthen the proper knowledge of TB disease and treatment course and take responsible to reduce patient's delay. Focal well-wisher in large area of migrant community (e.g ThladKung, KamPhalar, WatHong, etc) should contact and cooperate with health education or heath care programmes of NGOs or hospital teams.

6.2.4 For Non Government Organization (NGO) level

NGOs advocate for migrant workers' right under national labor laws. In addition it play a critical role in reaching out to and communicating with migrants. By this study experience, local NGOs should widely use locally available Myanmar health volunteers. They had strong social network and no language barriers about

Thai or ethnic speaking and expert to identify the hidden or dropout cases of TB in every part of this area. Role of NGO (Raks Thai foundation) at this area is quite strong and so need to appreciated and encourage for its role. NGO should play more in important function as intermediaries communicating migrants' concerns and need to government and international community.

6.2.5 For Private and Government Hospital level

In spite of translators available, provision of adequate information about TB disease before starting treatment was still necessary (poor knowledge level, 51.59%).So, hospital staffs and health personnel should provide more frequent health education talk to TB patient within the long waiting period (50 % of patients with waiting time : up to 3 hours). This programme might be reinforced by local NGO with Myanmar health volunteer or ethnic language speaker. This study recommend that all of TB centers should follow the WHO standard of DOTS system in treatment of migrant TB patients and easy referrals system and non interrupted treatment relay card should be in advance. TB screening about close contacts ,HIV test for TB patients ,regular and sufficient dugs supply arrangements were really appreciated .

6.2.6 For Employer level

Even the migrant workers were chance to cure under social security system with 30 bahts, there were hidden problems of chronic illness , financial and social problems still persist among them.. As the aspect of TB treatment, work place TB control programme should be established with the support of TB center of respective hospital. This programme may include infectious disease knowledge education programs to supervisor and manager in order to get their active participations of TB prevention and treatment. Local authorities and employers will be play as management, support and advocacy role and TB center will play as a technical role. This programme will be benefit for owner as follows:(i) healthy working place with healthy practice of workers not for healthy worker effect, but also (ii)can control active work force by workers' trust (iii) save working hours and avoid unnecessary support and management (iv) good future impression and image among their economic arena . Similarly, migrant workers don't need to waste their income

generated working hours or days and also avoid unnecessary expense for traveling and support. Generally, this programme made sure that complete cure of vulnerable and risky groups have treated at only one work place with appropriate kindness of employers. As a view from public health level, it can totally avoid disease spread during TB patients come to and back from TB center and surely overcome compliance and defaulter problems of TB. Further potential patient's delay problems due to poor knowledge, perception, less income problems, etc were easily overcome by this programme. Lastly, regular checking about worked places and rooms hygienic conditions were recommended. Suitable working place and time schedules for workers' health status and good ventilation system were mandatory.

6.2.7 For Provincial Health level

Provincial health level knew that every health sector of province, including demographic data of province. So, it can adjust the strong and weakness of local resources and expertise. This study suggested that advocacy role of provincial health office is a very important in work place TB control programme. Provincial health office can manage and organize employer, government hospital, local private hospital, and international or local NGOs. Then it can implement this programme effectively.

For more accurate information, the migrant data must be taken in the provisional TB control and surveillance system. Promotion of migrant community participation in distribution of health education in TB disease prevention and control were also advised. Provincial health level should be sensitive to the possibility of workers may refuse screening and treatment for TB because of fear of the social consequences.

6.2.8 For local Authorities level

This study suggests that, local authorities jointly cooperated with local NGO, Provisional Health office , Hospitals and then should arrange basic health education programme for migrant's early awareness of infectious diseases. This programme will be launch as apart of their work permit registration or renewing work permit programme. This time is a best and early time to give health education .Initial recruitment areas of migrant were also observed with good approach and health

screening programme should be start at this time and areas. According to this study finding , one main reason for delay was waiting for health insurance card after labor registration. So, the time interval should be shorten as much as possible .Generally ,local authorities should educate employers and local law enforcement personals about the rights of migrant workers ,and set up channel for reporting and penalties procedure (local license to operate) for unfair employers or persons and also providing protection to those reporting.

6.2.9 For Ministerial level

Thai Ministry of Labor and social welfare should respect the International Convention for migrant workers and their families. The registered migrants in all labor sectors should be allowed to organize themselves to form a union. These unions (e.g Yinn Nyein Panne Social Union ,United Social Welfares Group) will be allowed for promotion of social support and peer heath education programme by themselves. That social union will help early case referral and healthy practice of TB patient, as well as encourage regular and complete cure of TB disease. The ministry should also established a mechanism to support non government organizations (NGOs) and community-based organization (C.B.Os) in effort to reach out to migrant workers. Initial recruitment areas of migrant workers were observed and health screening programme should be start first with local or border disease control of Myanmar side.

Migrants, if illegal or legal are a part of the work force in Thailand and further population movement will not stop by boundaries. Since it was known that TB were still infected in migrants as well as in local people, potential to spread every work places :so **Thai Ministry of Public health** should highly focus on TB disease control programme rather than other infectious diseases. Because of this "**Triple Negative Impacts**" to local people, employers and also migrant workers, it is highly recommended to strengthen the existing work forces and case finding strategies (early case detection at O.P.D patient with cough ,work place case checking, voluntary heath checking ,etc) . Existing border health office, border disease control programme ,border health and environment threats initiative programme should be strengthen. This migrant TB patient problem is not only rely on Thailand. So, each

and every level of Ministry of public health should cooperated with Ministry of Health, Myanmar.

6.2.10 For Government level

A. Royal Thai Government

A recent study on the demand for foreign workers in Thailand found that in the next three years, Thailand is expected to need more and more workers in 2005-2006 in order to accommodate the economy as it is currently growing (Asian Study Institute, et al, forthcoming 2004). In order to get demand of healthy workers and effective productivities, need to establish proper channel of migrant worker flow. Present condition is that illegally pass the border, temporary residency card and registered in one specific area or work place with work permit but named as illegal migrant workers. This condition should be *legal permission for legal need* and also become as legal workers. The workers must follow rule and regulations of the host country and also right to get about migrant workers status. This study suggest that proper and fair policy should be set for migrant workers and employers and it is highly benefit for TB disease spread in Thailand.

B. Myanmar Government

Based on the research conclusion, the migration and migrant workers' problems were not only faced with Myanmar or southeast Asia region alone. This is globally occurred. The sooner we solve, better we give great benefits for our poor beloved nationalities. It is clearly seen that not only one county problem but also two countries can solve the problems properly. Bilateral cooperation and mutual understanding will promote the effective way to approach this problem. The government should be set up practical management on migration with the good perspective of economic and disease control. Moreover, government should arrange joint control programme of foreign affair , labor and health sector, then establish task forces between respective ministerial levels of two nations.

6.2.11 For Further study:

Similar study is recommended to conduct on a large scale of newly diagnosed cases with awareness of symptoms as a independent factors. From future study can obtain more relevant results or to confirm about this study results..

Another research is also recommended to study the effect of health insurance system in patient's delay.

As there are many other migrant groups along the whole Thai-Myanmar border, further similar study to this one should be carried out.

Further prospective studies are recommended in term of patient's delay, system delay ,total delay , defaulter and compliance study.

Qualitative study to explore the socioeconomic and workplace problem of TB patients would be interesting topic.

REFERENCES

1.Background document prepared for committee on TB epidemic. [Online]. WHO. 2003. Available from: http://www.stapth.org/events/world-to-day 2004/ document. asp [Accessed 2004 Nov 22]

2. A.Yilmaz et al. Delay in the diagnosis and treatment of hospitalized patient with smear-positive pulmonary TB, SSK Sureyyapasa Center for Chest disease and thoracic surgery,Istanbul,Turkey. 2001; Vol 95; 802-5.

3.Global TB control surveillance , planning ,financing.(WHO report 2004)

4. World Health Organization . An expanded DOTS framework for effective TB control. Geneva: The Organization; 2002. WHO/CDS/TB/2002.297

5. Rojanapithayakorn W, Narain JP. TB and HIV, some questions and answers. New Delhi: The Organization; 1999. P.9-13.

6. World Health Organization. Fight AIDS, Fight TB, Fight now: TB / HIV information pack. Geneva: The Organization; 2004.

7. Benjanmin O. A , et al. Guideline for workplace TB control activities: the contribution of work place TB control activities to TB control in the community, Geneva, WHO and ILO, 2003, WHO/CDS/TB/2003.323

8. Heidi Larson. The economic impacts of Tuberculosis, section 1 the morbidity and mortality burden of TB, 2000 March 22-24 , the stop TB initiative 2000 series

9. Vuttivirojanna V. Lecture note on MPHM 19 th Batch. Bureau of General Communicable Diseases, Diseases Control Department: MOPH; 2004.

10. Mukherjee SJ, et al .Studies programme and principles in treatment of MDR-TB on factors influencing patient's , doctor's and total delays of TB cases in developed and low or middle income countries. Lancet 2004; 363: 474-81.

11. World Health Organization TB epidemiology and control. Regional Office for Southeast Asia. New Delhi: WHO ,2002 . Document #SEA/TB/248.

12. Communicable Diseases Control 10th Office. Report on TB situation in Northern Thailand. Chaing Mai: The Office; 2004.

13. Mathur P, et al. Delays diagnosis of pulmonary TB in city hospitals. Arch Inter Med 1994; 154: 306-10.

14. Pirkis JE, et al. Time to initiation of anti-TB treatment Delay, National Center for Epidemiology and population Health ,Australian National University ACT. TB Lung Dis 1996; 77: 401-6.

15. International TB Control Programme. Annual Report 1997, Geneva: World Health Organization ,1999.

16. An International Journal of health Development, World Health Forum reprinted. Vol; 18. number ¾,1997. WHO, Pg 245, Stop TB partnership.

17. Global TB Control. WHO Report 1999. Geneva: World Health Organization; 2001. WHO/CDC/CPC/TB/99.259

18. World Health Organization. Report of the Ad-hoc Committee on the TB epidemic WHO/TB/95.183.1995

19. Dolin PJ, Paviglione MC, Kochi A. Global TB incidence and mortality during 1999-2000. Bull World Health Organ 2000; 72: 213-220.

20. World Health Organization. TB Programme framework for effective TB Control. Geneva: The Organization; 1994. WHO/TB/94.179

21. Enarson DA. TB guide for low income countries. 3rd ed. Paris: International Union Against TB and Lungs Diseases. 1994.

22. Nur HM. Compliance with treatment among TB patients under family-based DOTS strategy, in Udothani province, Thailand [M.P.H.M Thesis in Primary Health Care Management]. Nakhon Pathom: Faculty of Graduate Studies, Mahidol University, 2003.

23. Thailand. Ministry of Public Health. Thailand health profile 1999-2000. Nonthaburi: The Ministry; 2002 .p.243.

24. Benner MT. Factors determining malaria prevalence among migrants Myanmar: a study of migrants in center in Mae Sot and Phob Phra district, Tak province, Thailand [M.P.H.M Thesis in Primary Health Care Management]. Nakhon Pathom: Faculty of Graduate Studies, Mahidol University; 1997.

25. Awatsaya P, et al. Migrant domestic workers from Burma to Thailand. Nakhon Pathon: Institute of Population and Social Research, Mahidol University; 2004.

26. Becker MH. The health belief model and personal health behavior. Place of publication: Charles.B.Slack; 1974.

27. Cockerham WC. Medical sociology: 7th ed. New Jersey: Pentice Hall; 1989.

28. Tou PB. Utilization of Thai traditional massage at the institute of Thai traditional medicine, department for development of Thai traditional and alternative medicine ,ministry of public health, Thailand [M.P.H.M Thesis in Primary Health Care Management]. Nakhon Pathom: Faculty of Graduate Studies, Mahidol University; 2004.

29. Cockerham WC. Medical Sociology. 2nd ed. New Jersey: Pentice Hall; 1982.

30. Aday LA, Anderson RA. framework for the study to medical care .Health Serv Res 1974; 9: 208-20.

31. Markides CP.Women and access to health care. Soc: Sci Med 1992;35(4): 619-26.

32. Alder NE, et al. Socio-economic inequalities in health: no easy solution. JAMA 1993; 269: 3140-45.

33. Auer C, et al. Health seeking and perceived cause of TB among patients in Manila, Philippines. Trop Med Int Health 2000;5 (9): 648-56.

34. Thadden S, Deborah. M. Tool for walk, maternal mortality in context. Global TB Programme: WHO; 1990.

35. Korne,Kowathana. Factors related to behavior of delayed treatment and therapy of pulmonary TB, Mahidol University, 1988. .

36. Aoki, et al. Studies on factors influencing patient's , doctor's and total delays of TB cases detection in Japan. Bull IUAT 1985; 60(3-4): 128-30.

37. Asch S, et al. Does fear of immigration authorities deter TB patients from seeking care? West J Med 1994; 161(4): 373-76.

38. Tahir BS. Patient's delay and Doctor's delay in the Diagnosis of TB in TB Zonal Center II , Thailand [M.P.H.M Thesis in Primary Health Care Management]. Nakhon Pathom: Faculty of Graduate Studies, Mahidol University; 1994.

39. Payanadana V, et al. .Information prepared for an external evaluation of the National TB programme ,Thailand 1994. Bangkok: Tuberculosis Division, Department of Communicable Disease Control; 1994. p31-92.

40. Soe M. Burden of TB in Myanmar: social science perspectives [M.A.Thesis in Health Social Science]. Nakhon Pathom: Faculty of Graduate Studies, Mahidol University; 2002.

41. Liem Le T. Patient's delay in seeking treatment for pulmonary TB among Adult population in Longgan Province ,Vietnam [M.P.H.M Thesis in Primary Health Care Management]. Nakhon Pathom: Faculty of Graduate Studies, Mahidol University; 1999 .

42. Abebe S, et al. Patients' delay and health system delay in diagnosis of pulmonary TB in northwest Ethiopia. National TB and Leprosy Control Programme, Addis Ababa, Ethiopia, Dec. 1993.

43. Lwanza SK, Lemeshow S. Sample size determination in health studies a practical manual. Geneva: WHO; 1991.

44. Research Methodology: A.D.P.M. 628 [Handouts].ASEAN Institute for Health Development, Mahidol University; 2004.

45. Marge B. Men. Repord Health Matters 1996 Nov; (8): 7-10.

46. Suwan P. Determinants of health attitudes and attitude measurement guideline, Bangkok: Collage of Public Health, Chulalongkorn University; 2004.

47. Bluman AG. Elementary statistics: a step by step approach. 5th ed. New York: McGraw Hill; 2004.

48. Aurasri N. Knowledge, hope, strength for curing TB: TB/HIV Foundation, Thailand and The Research Institute of TB ,Japan Anti-TB Association :21 century Co., Ltd. July 2004.

49. Health Messenger Magazine , Klongtoey, Bangkok ,Thailand : Issues 21,22,23,25 Burmese Edition, 2004

APPENDIX

APPENDIX- A

QUESTIONNAIRE

Study on "Patient's Delay in seeking treatment from TB center among Myanmar migrants TB patients", SamutSakhon Province,Fourth Regional TB Control Area ,Thailand .

This questionnaire is used for a master's thesis study focus on patient's delay in seeking treatment from TB center among Myanmar migrants TB patients. Please make sure that every question should be answered only by interviewee. You have no right to make a leading question to interviewee but you should explain every question clearly and completely. Your interviewees' answer records will be confidential and anonymous. Data will be analyzed and interpreted as a group. Please follow instructions on each part of the questionnaire. Your active participation and coordination will have good impact on questionnaire validity and reliability. Your best effort are highly appreciated.

This questionnaire is divided into (5) parts,

Part I. Background information

Part II . Predisposing Factors

Part III . Enabling Factors

Part IV Need Factors.

Part V. Information about Delay to TB treatment.

May I remind you that the research will not be interpret the data if at least one question is missing.

I would like to thank you very much for your kind cooperation in this survey.

Dr. Moe Thaw

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Mahidol University.

"QUESTIONNAIRE"

Study on Patient's Delay in seeking TB center treatment among Myanmar migrants TB patients, SamutSakhon Province , Fourth Regional TB Control Area, Thailand.

Name of Patient_____ Current Address of Patient _____

Date of interview . _____/_____/_____

Name of interviewer;_____

Time of interview started : _____ finished:_____

Part I. Background Information

Name of TB center: Government Hospital [1] / Private Hospital [2]

Name of District: Mahachai /Kratumban/Ban Paew

Patients' Health Insurance I.D Number._____

Part II. Predisposing Factors (Please record the answers from your interviewees which reflect on their present conditions and put as mark (✓) in bracket [ ]

1. Age (in completed years):_____
2. Gender : [1] Male, [2] Female.
3. Ethnic group_____
4. What is your present marital status?
   [1] Single [2] Married.
   [3]Divorce/ Separate/ Widow
5. What is your present occupation?
   [1]Seafood Processing [3] Factory worker
   [2]General laborer [4] Others (specify)_____
6. How long have you been worked in this province? _____ months/ Years.
7. What is your dwelling for your stay in this province ?
   [1] Wooden house [3] Hut
   [2]Common living quarter [4] Apartment
   [5] Others (specify) _____
8. How many members in your present house (including you) ._____.

9. You stay here as

[1]nuclear family [2] extended family

[3]stay with friends [4]Others(specify)_____

10. What is your current family monthly income(average)? _____ Bahts

11. What is your highest education attainment?

[1]Illiterates [2] Read and write (no school education)

[3]Primary school [4] Middle school

[5]High school [6] Collage/university

[7]Others (specify) _____

12. For knowledge about TB and TB treatment,

Ask you interviewee that" Whether following statements are correct or not? Please answer only one response for each statement."

No	Statement	Yes	No	Not Sure
1	The etiological cause of TB is the infectious TB germ.	**1**	**2**	**3**
2	TB can give group of symptoms (persistent or recurrent cough for more than three weeks, evening fever and loss of weight).	**1**	**2**	**3**
3	When untreated TB patients cough, TB germs float in the air, then TB can spread out.	**1**	**2**	**3**
4	Respiratory tract is a route of TB infection enter into human body.	**1**	**2**	**3**
5	One family member infected with TB ,other members will be vulnerable to infect with it.	**1**	**2**	**3**
6	When the working place is poorly-ventilated, TB can spread .	**1**	**2**	**3**
7	Weak immunity due to smoking may prone to get TB.	**1**	**2**	**3**

No	Statement	Yes	No	Not Sure
8	TB may prone to get as an infection in AIDS patients.	1	2	3
9	Sunlight effectively kill airborne TB germ.	1	2	3
10	BCG vaccination is the active measure for children to prevent TB.	1	2	3
11	For the prevention of TB spread , whenever cough or sneeze, always use a cloth or both hands to cover mouth and nose.	1	2	3
12	The accurate way to detect of TB infection is sputum microscopy.	1	2	3
13	After taken three weeks of anti TB treatment, patient will no longer transmit infection to others.	1	2	3
14	Complete course with Six months multiple drugs therapy can cure TB .	1	2	3

Part III. Enabling Factors

(A) Availability of TB center, information about disease and treatment

1. How many TB centers near to your present resident area _____

2. Who **advice** you to come to this TB center

(a)private doctor [1]Yes [2]No

(b)neighbors [1]Yes [2]No

(c)self initiative [1]Yes [2]No

(d)your employer [1]Yes [2]No

(e)family member [1]Yes [2]No

(f)Myanmar health volunteer [1]Yes [2]No

(g)previous TB patients [1]Yes [2]No

(h)friends at work [1]Yes [2]No

(i)other Please specify_____

3. From whom and where did you get information about ***this TB center and its services*** ? Please tick **all the sources** from which you have received the information.

(a)hospital doctor/staffs	[1]Yes	[2]No
(b) friends	[1]Yes	[2]No
(c) private clinic doctor	[1]Yes	[2]No
(d) your employer	[1]Yes	[2]No
(e)Myanmar health volunteer	[1]Yes	[2]No
(f) previous TB patients	[1]Yes	[2]No
(g) newspaper/ magazine	[1]Yes	[2]No
(h) pamphlet	[1]Yes	[2]No
(i)television	[1]Yes	[2]No
(j)family members	[1]Yes	[2]No

(k)other Please specify_____

4. Did you know following ***types of services*** that you can get from this TB center?

(a) Consultation	[1]Yes	[2]No.
(b) Physical examination	[1]Yes	[2]No
(c) Sputum examination	[1]Yes	[2]No
(d). X-ray	[1]Yes	[2]No
(e) Anti TB drugs	[1]Yes	[2]No

(f) Others, Please specify_____

5.Where did you get information ***about TB and treatment course***? Please tick **all the sources** from which you have received the information.

(a)hospital doctor/staffs	[1]Yes	[2]No
(b) friends	[1]Yes	[2]No
(c) private clinic doctor	[1]Yes	[2]No
(d) your employer	[1]Yes	[2]No
(e)Myanmar health volunteer	[1]Yes	[2]No

6.(Continue)-------Where did you get information ***about TB and treatment course***? Please tick **all the sources** from which you have received the information

(f) previous TB patients [1]Yes [2]No

(g) newspaper/ magazine [1]Yes [2]No

(h) pamphlet [1]Yes [2]No

(i)television [1]Yes [2]No

(j)not clearly know from where [1]Yes [2]No

(k)other Please specify_____

(B) Accessibility to TB center

1. How far from your house and this TB center? Approximately_____ km.

Total Traveling time: from house to TB center ._____min _____hours.

Do you think the time you specified above is convenient?

[1] Yes [2] No

2. How do you travel from your home to TB center

[1]on foot [3] motorcycle/bicycle

[2]bus [4]others specify_____

3. How long have you wait to see the doctor for examination?

About _____minutes _____ Hr. .Do you think it is appropriate ?

[1] Yes [2] No

4..Do you have enough free time to go to TB center during your work?

[1] Yes [2] No

If NO, please specify _____

5. Who is your overall financial support to go to TB center?

[1]self [2] family

[3]friend [4]others :Please specify._____

6. For each visit to this TB center , how much overall money do you spend?

Average cost is _____Baht. Do you think it is a burden for you ?

[1] Yes [2] No

7. Who is accompanying with you as usual to go the TB center?

[1]no one [2] family member

[3]friend [4] others : Please specify._____

8. Is there any legal constraints for you to go TB center?

[1] Yes [2] No

If YES, please specify _____

9.. Did you need any permission from your employer to go to TB center?

[1] Yes [2] No

10. Do your employer deduct payment when you come to TB center ?

[1] Yes [2] No

11. Have you ever change your work because of TB?

[1] Yes [2] No

If YES, please specify the reason(s) _____

12. Do you have any language barrier when you go to TB center?

[1] Yes [2] No

Part IV.

For Perception on severity of TB and benefit of TB treatment: Ask your interviewee that“ Do you agree or disagree with the following statements? If you are not sure with these statement , answer not sure ” Please answer only one response for each statement.

A; agree **D**; disagree **NS**; not sure

No	Statement	A	D	NS
	Perceived Severity of getting TB	1	2	3
1	TB is a deadly infectious disease.	1	2	3
2	TB can spread to others part of the body.	1	2	3
3	*Having TB may discriminate you from society* .	1	2	3
4	Suffering with TB, could partly loose your income	1	2	3
5	*TB is not permanently cured with drugs alone...*	1	2	3

	Perceived on benefits of TB treatment	A	D	NS
1	Treatment process of TB dose not interrupt your employment status.	1	2	3
2	Early TB treatment can speed up recovery from TB.	1	2	3
3	Timely treatment of TB can prevent TB complication.	1	2	3
4	Irregular taking of TB drugs during course will lead to drug resistant.	1	2	3
5.	*Delayed in TB treatment may not lead to spread of TB*.	1	2	3
6.	The sooner you start treating TB, the lesser you spend your expense.	1	2	3

Part V. Information about Delay to TB treatment

1. How long have you been treated at this TB center _____Months.

2. What is your **only one main reason** to come to this TB center?

[1] Can not work effectively, come by self initiative

[2] Detected by labor registration as having TB

[3] Urge from others (friend, family, neighbors, etc)

[4] Suffering symptoms are getting worse

[5] Others, Please specify_____

3...Which of the following symptoms did you **first notice before you come to this TB center?** If **NO** symptoms, please go to question **Number. 5**

If YES**,** Please specify, whatever you have experienced with more than one symptom, you can mention freely.

a)-persistent cough	[1] Yes	[2] No
b) - evening feverish	[1] Yes	[2] No
c)-chest/ back pain	[1] Yes	[2] No
d)-weight loss	[1] Yes	[2] No
e)- haemoptysis/cough with blood	[1] Yes	[2] No
f)- general weakness	[1] Yes	[2] No
g)- sputum	[1] Yes	[2] No

h)-other. Please specify_____

Please choose which one is the earliest one……..e.g. a or b or c or etc (____)

4. How long have you take for seeking anti TB treatment as " **a whole period of time"** start **from** the time of *first and earliest noticed symptom* **till** *first visits to this TB center*?

_____days,_____ weeks,_____ months ago.

5. If you have no symptoms, how long have you take for seeking anti TB treatment as " **a whole period of time"** start **from** the time of *your job medical check up* **till** *first visits to this TB center*?

_____days,_____ weeks,_____ months ago

(**This whole period of time absolutely dose not mean for current TB treatment period. " A whole period of time" is less than one month , Please go to question Number. 9)**

6 .What is your **only one main reason** for take above long period of time(more than one month)

[1] after labors medical check up, wait for health insurance cards

[2] symptoms are minimal and gradually arise

[3] temporary treatments and get well

[4] financial problems

[5] no accompany/support person

[6] busy with working/ change job

[7] others_____

7. After first notice symptoms ,where did you go or seek for treatment?

Please rank with time duration of each treatment within this long period.

Health Facilities	**Ranking**	**Duration(days/weeks)**
a)Self- medication		
b)Drug Store		
c)Local practitioner		
d)Other health center /hospital -- --- - - - - - -- - - - - - - - -		
e)Other .specify _____		

8. Why did you choose the first place to relief of your symptom?

[1] Near [4] Familiar

[2] Good reputation [5] Cheaper

[3] Suggested by others [6] Think about minor illness

[7] Other please specify._____

9. Do you have any experience about Anti TB treatment before this TB center treatment , please mention about what kind of treatment

[1] Drugs only [2] Sputum examination and drugs

[3] X ray, sputum examination and drugs

[4] Others_____

****Any suggestion, please write about respondent's ideas on TB treatment**

***Thank you very much for your kind cooperation in answering this questionnaire; wishing you soon well….**

CONSENT FORM

The information about the study has been read to me.I have had the opportunity to ask questions about it , and I am satisfied with the answers that have been provided. I agree voluntarily to take part in the study and I understand that I have the right to withdraw from the study at any time without any affecting with my future medical care .

Signature_____

Name _____

Date_____

APPENDIX B

Table 33 Implication for awareness of having disease before coming to TB center and association with delay.

Statements	Frequency of answer *	Percent (%)
I. First notice symptoms		
Cough up sputum	66	42.04
Chest/ back pain	62	39.49
Persistent cough	57	36.31
Weight loss	53	33.76
General weakness	35	22.29
Evening feverish	32	20.38
Haemoptysis/cough with blood	14	8.92
Other. (loss of appetite, dizziness, etc)	11	7.01
II. Advice Persons		
Employer	109	69.43
Self initiative	35	22.29
Private doctor	18	11.46
Family member	11	7.01
Friends at work	9	5.73
Other (O.P.D hospital staff/ translators)	4	2.55
Myanmar health volunteer	3	1.91
Neighbors	1	0.64
Previous TB patients	1	0.64

*Multiple answers (yes) for those got above informations among total respondents. those who did not have information)

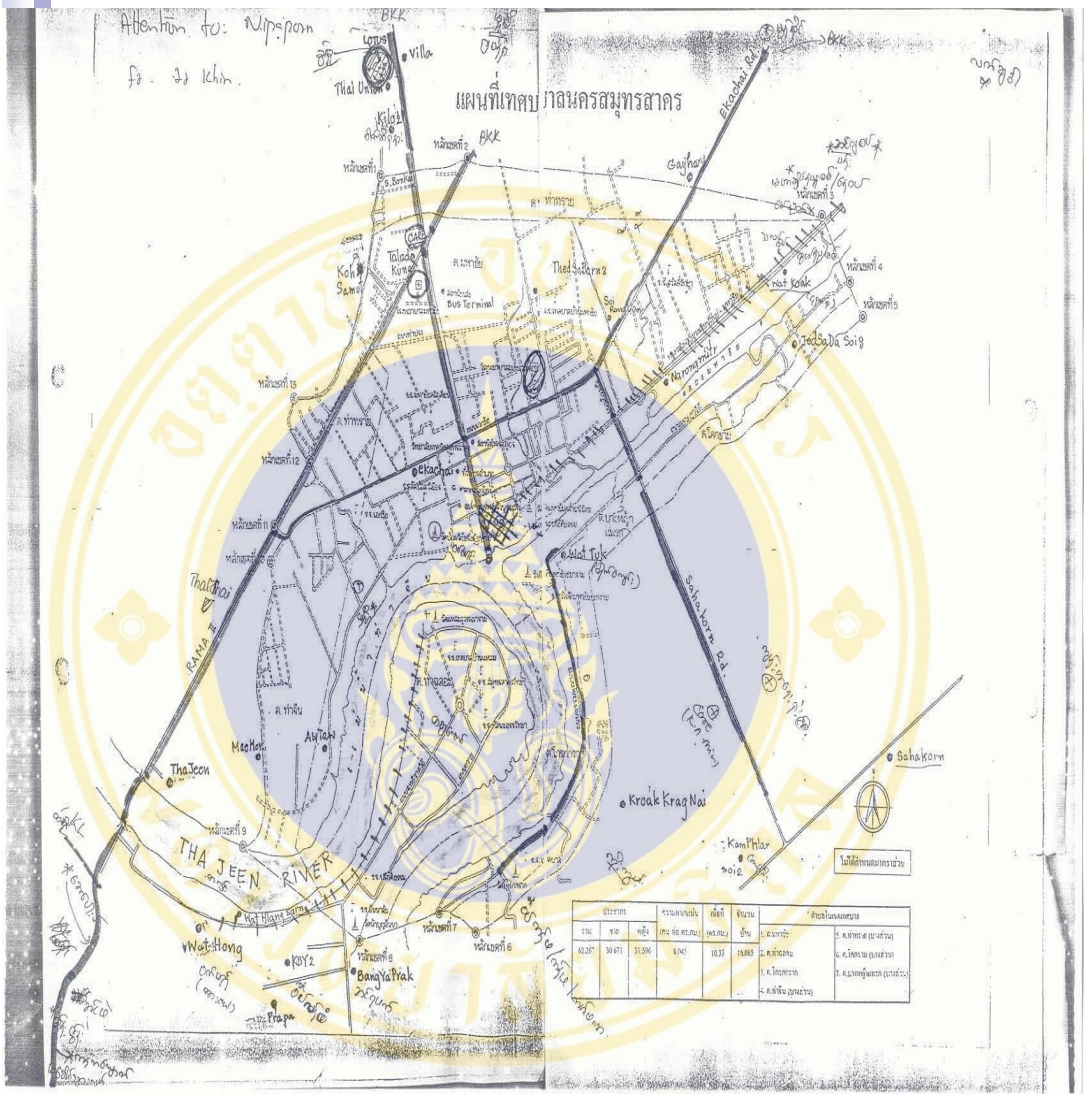
APPENDIX C

Samutsakhon Map

Questionaires in Myanmar Version

I.E.C. material for Myanmar migrant TB patients

Samutsakhon Map



မြန်မာ့ရွှေ့ပြောင်းအလုပ်သမားတိဘီဂျာဂါရှင်များ၏ တိဘီကုသရေးတွင်

နှောင့်နှေးကြန့်ကြာစေခဲ့သော အချက်များကို လေ့လာခြင်း

အပိုင်း (၁)

၁။ယခုတိဘီကုသနေသောဆေးရုံဆေးရုံကြီး/စိဗိလျှိုင်ဖိုက်စမွတ်စခွန် ----------ခရိုင်
၂။လူနာအမည်---------- နေရပ် ----------
၃။ဆေးရုံဘတ်နံပါတ် ----------
၄။မေးမြန်းမှုစတင်ချိန်----------
၅။လူနာ၏ပြည့်ပြီးအသက်---------- ကျာ / မ ---------
၆။လူမျိုး----------

အပိုင်း (၂)

၁။ ယခုလက်ရှိအလုပ်
( ) ပင်လက်ထွက်ငါး/ပုဇွန်ပြုပြင်ခြင်း ( ) စက်ရုံလုပ်သား
( ) အထွေထွေလုပ်သား ( ) အခြား---------

၂။ လက်ရှိမိသားစု၏တစ်လပျမ်းမျှဝင်ငွေ ---------- ဘတ်

၃။ ပြီးဆုံးခဲ့သောအတန်းပညာ
( ) စာမတတ် ( ) ရေးတတ်/ဖတ်တတ်
( ) မူလတန်း (၁-၄) ( ) အလယ်တန်း (၅-၈)
( ) အထက်တန်း (၉-၁၀) ( ) အခြား----------

၄။ ယခုဒေသသို့ရောက်ရှိနေထိုင်သောကာလ ------- လ ------ နှစ်

၅။ လက်ရှိအိမ်ထောင်ရေး အခြေအနေ
( ) လူပျို/အပျို ( ) အိမ်ထောင်ရှိ
( ) ကွာရှင်း/ခွဲခွါ ( ) မုဆိုးဖို/မုဆိုးမ

၆။ ယခုနေထိုင်သော အိမ်အနေအထား
( ) သစ်သားအိမ် ( ) တဲ
( ) စုပေါင်းနေထိုင်သောတန်းလျား (ဘုံအိမ်သာ/ရေချိုးခန်း)
( ) သီးသန့်အခန်းငယ် (အိမ်သာ/ရေချိုးခန်းတွဲလျက်)
( ) အခြား ---------

၇။ ယခုနေထိုင်သောအိမ်ရှိ (သင်အပါအဝင်) လူဦးရေပေါင်း ---------- ဦး

၈။ ယခုအိမ်တွင် နေထိုင်သောသူများသည်
( ) မိမိအပါအဝင် မိသားစုတစ်စုတည်းသီးသန့်
( ) အခြားညီ/ကိုဝမ်းကွဲ၊ ဦးလေး၊ အဒေါ်များနှင့်ရောနှော
( ) သူငယ်ချင်းမိတ်ဆွေများနှင့်အတူနေ
( ) အခြား ----------

အပိုင်း (၃) တီဘီအဆုပ်နာကုသရန် သတင်းအချက်အလက်ရရှိမှု

၁။ ဤအနီးအနားရှိ သင်သိသောတီဘီကုသနိုင်သည့် ဆေးရုံဘယ်နှစ်ခု ရှိပါသလဲ။
------- ခု

၂။ ယခုတီဘီဆေးရုံ နှင့် သင့်အိမ်အကွာအဝေး ---------- မိုင်။
လာရန်ကြာသောအချိန် ------- မိနစ်၊ -------- နာရီ၊
ဒီလိုအချိန်ကုန်ခံလာရတာ အဆင်ပြေပါသလား။
( ) ပြေပါသည်။ ( ) မပြေပါ။

၃။ ယခုတီဘီဆေးရုံသို့လာပြရန် တိုက်တွန်းသူမှာ (တစ်ဦးထက်ပို၍ပြောနိုင်ပါသည်)
( ) ပုဂ္ဂလိကဆေးခန်းမှဆရာဝန် ( ) အိမ်နီးချင်း ( ) မိမိ
( ) မိမိအလုပ်ရှင် ( ) မိသားစုဝင်များ
( ) အလုပ်မှမိတ်ဆွေ ( ) မြန်မာကျန်းမာရေးလုပ်အားပေး
( ) တီဘီလူနာဟောင်း ( ) အခြား ------

၄။ ယခုဆေးရုံတွင် တီဘီကုသနိုင်ကြောင်းနှင့် ကုသပေးမှုအခြေအနေများကို ဘယ်လိုသိရပါသလဲ။
(တစ်ဦးထက်ပို၍ပြောနိုင်ပါသည်)
( )ဆေးရုံဆရာဝန်/ဆရာမထံမှသိ ( )သူငယ်ချင်းမိတ်ဆွေများ
( )ပုဂ္ဂလိကဆေးခန်းမှ ( )အလုပ်ရှင်
( )မြန်မာကျန်းမာရေးလုပ်အားပေး ( )တီဘီလူနာဟောင်း
( )သတင်းစာ/မဂ္ဂဇင်း ( )လက်ကမ်းစာစောင်
( )တီဗွီ ( )အခြား----------

အပိုင်း (၄)

၁။ ယခုတီဘီဆေးရုံကိုဘယ်လိုလာရပါသလဲ။
( )ခြေကျင် ( )မော်တော်ဆိုင်ကယ်
( )ဘတ်စ်ကား ( )အခြား----------

၂။ တီဘီဆေးရုံတွင်ပြရန် စောင့်ဆိုင်းရသော အချိန်ဘယ်လောက်ကြာပါသလဲ။
------ မိနစ် ----- နာရီ
ဒီလိုအချိန်ပေးစောင့်ရတာ အဆင်ပြေပါရဲ့လား။
( )ပြေပါသည်။ ( )မပြေပါ။

၃။ ယခုတီဘီဆေးရုံသို့လာရန် သင့်တွင် အချိန်အားရှိပါရဲ့လား။
( )ရှိပါသည်။ ( )မရှိပါ။
မရှိရသည့်အကြောင်းမှာ ----------

၄။ ယခုတီဘီဆေးရုံသို့လာရန်ငွေကြေးကိစ္စများကို မည်သူကထောက်ပံ့ပေးပါသလဲ။
( )မိမိဝင်ငွေ ( )မိသားစု ( )သူငယ်ချင် ( )အခြား-----

၅။ ယခုတီဘီဆေးရုံသိုကစ်ခေါက်လာပါက စုစုပေါင်းငွေဘယ်လောက်ကုန်ပါသလဲ။
------ ဘတ်။ ထိုငွေသည် သင့်အတွက် အကုန်အကျများခြင်းဖြစ်ပါသလား။
( )ဖြစ်ပါသည်။ ( )မဖြစ်ပါ။

၆။ သင်တီဘီဆေးရုံလာသည့်အခါ မည်သူကအဖော်အဖြစ်လိုက်ပါစောင့်ရှောက်ပါသလဲ။
( )မိမိတစ်ဦးတည်း ( )မိသားစုဝင်တစ်ဦးဦး
( )သူငယ်ချင်းများနှင့် ( )အခြား----------

၇။ သင်တီဘီဆေးရုံသို့လာသည့်အခါ ဥပဒေအကြောင်းအရအခက်အခဲအတားအဆီးမျိုး
ရှိပါသလား။ ( ) ရှိပါသည်။ ( ) မရှိပါ။
ရှိပါက ဖော်ပြပေးပါ။ ----------

၈။ သင်တီဘီဆေးခန်းသို့ပြရန် အလုပ်ရှင်ထံမှ ခွင့်ပြုချက်တောင်းရပါသလား။
( ) တောင်းရပါသည်။ ( ) မတောင်းရပါ။

၉။ သင်ယခုတီဘီဆေးရုံသို့လာသောနေ့အတွက် ရရှိမည့်ဝင်ငွေထိခိုက်မှုရှိပါသလား။
( )ထိခိုက်ပါသည်။ ( )မထိခိုက်ပါ။

၁၀။ သင်၏ယခုကျန်းမာရေးကြောင့် အလုပ်ခဏခဏပြောင်းရတာ ရှိပါသလား။
( ) ရှိပါသည်။ ( ) မရှိပါ။
ရှိရသည့်အကြောင်းမှာ ----------

၁၁။ သင်တီဘီဆေးရုံသို့လာသည့်အခါ ပြောဆိုမေးမြန်းရတာအခက်အခဲ ရှိပါသလား။
( ) ရှိပါသည်။ ( ) မရှိပါ။

အပိုင်း (၅) တီဘီအဆုတ်နာအကြောင်းသိရှိထားမှု
အောက်ပါအချက်များကို ဖတ်ပြီး "သိပါသလား" ဟုမေးရန်။

စဉ်	အကြောင်းအရာ	အရင်ထဲကသိ	အခုမှသိ	မသေချာ
၁	"တီဘီရောဂါသည်ကူးစက်တတ်သောရောဂါပိုးကြောင့်သာဖြစ်သည်" ကိုသိပါသလား။			
၂	တီဘီရောဂါလက္ခဏာကို " ပိန်ကျသွားခြင်း၊ချောင်းသုံးပတ်ကျော် ဆိုးခြင်း၊ ညနေပိုင်း အဖျားတက်ခြင်း" တို့ဖြင့် အကြမ်းဖျဉ်း သတ်မှတ်ထားသည်။			
၃	တီဘီရောဂါရှင်တစ်ဦး ချောင်းဆိုးနာချေလျှင် ရောဂါပိုးများလေထဲ ပျံ့နှံ့ရောက်ရှိသွားသည်။			
၄	လေထဲတွင် ပျံ့လွင့်နေသော တီဘီရောဂါပိုးကို ရှူမိခြင်းဖြင့် တီဘီ ရောဂါကူးစက်ခံရသည်။			
၅	တီဘီရောဂါရှင်တစ်ဦးအိမ်တွင်ရှိနေပါက အိမ်ရှိ အခြားသူများကို အလွယ်တကူကူးစက်နိုင်သည်။			
၆	လူနေထူထပ်ပြီး လေဝင်လေထွက်ညံ့သောအလုပ် နေရာများတွင် တီဘီရောဂါအလွယ်တကူ ကူးစက်နိုင်သည်။			
၇	ဆေးလိပ်သောက်ခြင်းဖြင့်ကိုယ်ခံအားကျပြီးတီဘီအလွယ်တကူ ကူးစက်နိုင်သည်။			
၈	ခုခံအားကျရောဂါ (အေအိုင်ဒီအက်စ်)ဖြစ်သူများတွင်လည်း တီဘီ ရောဂါအလွယ်တကူကူးစက်နိုင်သည်။			
၉	နေရောင်ခြည်သည် လေထဲတွင်ရှိသောတီဘီပိုးကိုသေစေနိုင်သည်။			
၁၀	ခလေးငယ်များဘီစီဂျီ(အဆုပ်ရောဂါကာကွယ်ဆေး)ထိုးထားခြင်းဖြင့် ထိုရောဂါ၏ဆိုးဝါးမှုမှ ကာကွယ်နိုင်သည်။			
၁၁	ချောင်းဆိုးနာချေလျှင်လက်ကိုင်ပုဝါ(သို့)လက်နှစ်ဘက်ဖြင့် အုပ်၍ဆိုးခြင်းက တီဘီပြန့်ပွားမှုကိုကာကွယ်ရာရောက်သည်။			
၁၂	တီဘီရောဂါရှိ/မရှိသေချာရန် သလိပ်ပိုးစစ်ရသည်။			
၁၃	တီဘီရောဂါရှင်သည်သုံးပတ်ခန့်ဆေးသောက်ပြီးပါကသူတစ်ပါး ကို မကူးစက်နိုင်တော့ပါ။			
၁၄	"ဆေးပေါင်းစုခြောက်လ"တီဘီဆေးပြီးပြတ်အောင်သောက်ပါက ရောဂါ ပျောက်ကင်းနိုင်သည်။			

၁၅။ အထက်ပါအချက်များကဲ့သို့ တီဘီရောဂါဖြစ်ခြင်း၊ ပြန့်ပွားခြင်း၊ ကူးလွယ်ခြင်းနှင့် ကာကွယ်ကုသခြင်းများကို အရင်က ကြားခဲ့ဘူး၊ သိခဲ့ဘူးသောနေရာများကို ပြောပြပေးပါ။

( ) ဆေးရုံဆရာဝန်/ဆရာမထံမှသိ ( ) သူငယ်ချင်းမိတ်ဆွေများ
( ) ပုဂ္ဂလိကဆေးခန်းမှ ( ) အလုပ်ရှင်
( ) မြန်မာကျန်းမာရေးလုပ်အားပေး ( ) တီဘီလူနာဟောင်း
( ) သတင်းစာ/မဂ္ဂဇင်း ( ) လက်ကမ်းစာစောင်
( ) တီဗွီ ( ) အခြား----------

အပိုင်း (၆) ယခုတီဘီရောဂါကုသမှု

၁။ ယခုတီဘီကုသနေသော ကာလကြာချိန် --------- လ၊ ------- ရက်

၂။ ယခုတီဘီဆေးရုံသို့ ဆေးလာကုရသော အကြောင်းမှာ

( ) အလုပ်ကောင်းစွာမလုပ်နိုင်၊ မိမိဘာသာလာပြရာမှရောက်။
( ) ဘတ်ရီက်စဉ်ရောဂါရှိမှုန်း သိကုသရသည်။
( ) မကုချင်သေး၊ ဘေးပတ်ဝန်းကျင်မှတိုက်တွန်း (မိတ်ဆွေ၊ မိသားစု၊အလုပ်ရှင်)
( ) ခံစားရသောဝေဒနာများပိုဆိုးလာ၍
( ) အခြား ----------

၃။ ယခုတီဘီဆေးရုံသို့ လာမကုမီ မည်သည်ကို ခံစားရပါသလဲ။ ("မခံစားရပါ၊ ဘတ်ရီက်စဉ် ကျန်းမာရေးစစ်၍သိ" ဆိုလျှင် <u>မေးခွန်းနံပါတ် ၅ ကိုဆက်မေးပါ</u>။)

ခံစားရပါသည်ဆိုလျှင် အောက်ပါတို့ကို ပြောပြပေးပါ။

(၁) ကာလကြာရှည်စွာ ချောင်းဆိုးနေခြင်း (၂) ညနေပိုင်းအဖျားတက်ခြင်း
(၃) ကျော/ရင်ဘတ်အောင့်ခြင်း (၄) ပိန်လာခြင်း
(၅)ချောင်းဆိုးလျှင်သွေးပါခြင်း (၆) အားအင်ကုန်ခန်း၍နေထိုင်မကောင်းဖြစ်ခြင်း
(၇) သလိပ်ထွက်ခြင်း (၈) အခြား ----------

အထက်ပါတို့အနက်မှ ပထမဆုံး၊ အစောဆုံးသတိထားမိသည့် လက္ခဏာတစ်ခုကို ရွေးပေးပါ။

(၁ မှ ၈) အထိ နံပါတ်တစ်ခုသာဖြည့်ပါ။ ---- ( )

၄။ပထမဆုံး၊အစောဆုံးသတိထားမိသည့်ထိုလက္ခဏာမှ ယခုတီဘီဆေးရုံစလာသည် အထိကြားကာလ ကြာချိန် ------ လ -------ရက်

၅။ ဘတ်ရီက်စဉ် ကျန်းမာရေးစစ်သည်မှ ယခုတီဘီဆေးရုံစလာသည်အထိ ကြားကာလ ကြာချိန်----- လ၊ -------ရက်

***ထိုကြားကာလကြာချိန်သည်တစ်လအောက်ဖြစ်ပါက <u>မေးခွန်း (၁၀)</u> သို့ဖြေခိုင်းပါ။

၆။ တစ်လကျော်ကြာနေပါက ထိုကဲ့သို့ ကြာနေရခြင်းအဓိကအကြောင်းမှာ (တစ်ခုသာရွေးရန်)

( )ဘတ်ရိုက်ပြီးအဖြေစောင့်၊ အဖြေသိရှိခေါ်မှလာရ

( )ရောဂါဖြစ်စ အရေးမကြီးဘူးထင်၍

( )ကြားကာလအခြားကုသမှုများကြောင့်

( )ငွေကြေးအခက်အခဲ

( ) လူမှုရေးအခက်အခဲ (မည်သူမျှမကူညီ)

( )အလုပ်အကိုင်အရွှေ့အပြောင်း ( ) အခြား ----------

၇။ ကြားကာလကြာချိန်တွင် သင်ရောဂါသက်သာရန်ဘာတွေလုပ်ခဲ့ပါသလဲ။

	ရောဂါသက်သာရန်လုပ်ဆောင်မှု	ကြာချိန်	ကုသမှုအစဉ် (ပ/ဒု/တ/စ)
(က)	နီးစပ်ရာဆေးမြီးတိုသောက်		
(ခ)	ဆေးဆိုင်မှပြောပြ၍ ဝယ်သောက်		
(ဂ)	အပြင်ဆေးခန်းသွားပြ		
(ဃ)	တီဘီဟုသတ်မှတ်၍အခြားနေရာများတွင်ကုခြင်း ( )( )		
(င)	အခြား		

၈။ အထက်ပါကြားကာလကုသမှုများတွင် သင်ပထမဆုံးသွားခဲ့သည့်နေရာသည် သင့်အတွက်

( )သွားရလွယ်ကူ၍ ( ) ခင်မင်ရင်းနှီး၍ဆေးစမ်းသောက်ကြည့်

( )ဆက်ဆံရေးကောင်း ( ) ဈေးသက်သာ၍သွား

( )အခြားသူများကတိုက်တွန်း ( ) ရောဂါအသေးအမွှားဟုထင်

( )အခြား ----------

၉။ ယခင်ကတီဘီကုသခဲ့ဘူးပါက ဘယ်လိုကုသခဲ့ရသည်ကို ပြောပြပေးပါ။

( ) ဆေးသောက်ခိုင်းရုံသာ ( ) သလိပ်စစ်/ဆေးသောက်ခိုင်း

( ) ဓါတ်မှန်ရိုက်/သလိပ်စစ်/ဆေးသောက်ခိုင်း ( )အခြား -----

၁၀။ ယခုတီဘီဆေးရုံတွင် သင်ဘာတွေ ကုသမှုခံရပါသလဲ။ သိထားသည်များကို ပြောပြပေးပါ။

( ) ဆရာဝန်/ဆရာမများနှင့် ရောဂါအကြောင်းမေးမြန်းသိရှိနိုင်သည်။

( ) ရောဂါစမ်းသပ်ကုသနိုင်သည်။ ( )သလိပ်စစ်နိုင်သည်။

( ) တီဘီကုသရန် ဓါတ်မှန်ရိုက်နိုင်သည်။

( )တီဘီဆေးလုံလောက်စွာရရှိနိုင်သည်။ ( )အခြား ------

အပိုင်း (၇) တီဘီအဆုတ်နာကုသခြင်းကို နားလည်ခံယူထားမှု
အောက်ပါအချက်များကို ဖတ်ပြု၍ "ဘယ်လိုသဘောရပါသလဲ" မေးရန်။

စဉ်	အကြောင်းအရာ	ဖြစ်နိုင်ပါသည်	မဖြစ်နိုင်ပါ	မသေချာပါ
	တီဘီရောဂါ၏ဆိုးဝါးမှု			
၁	"တီဘီရောဂါသည်သေစေနိုင်သောကူးစက် ရောဂါဆိုးဖြစ်သည်" ကိုဘယ်လိုသဘောရပါသလဲ။			
၂	တီဘီသည်ခန္ဓာကိုယ်၏အခြားနေရာများသို့ ပျံ့နှံ့သွားနိုင်သည်။			
၃	တီဘီရောဂါရှိခြင်းကြောင့် လူမှုအသိုင်းအဝိုင်းမှ အပယ်ခံရမည်။			
၄	တီဘီရောဂါဖြစ်ခြင်းကြောင့် ဝင်ငွေရရှိမှု လျော့နည်းနိုင်သည်။			
၅	တီဘီရောဂါကို ဆေးဝါးဖြင့် ပျောက်ကင်းအောင် မကုသနိုင်ပါ။			
	တီဘီရောဂါကုခြင်း၏ အကျိုးကျေးဇူး			
၁	"တီဘီဆေးကုသခြင်းကြောင့် ယခုအလုပ်ကို ထိခိုက်မှုမရှိနိုင်ပါ" ကိုဘယ်လိုသဘောရပါသလဲ။			
၂	စောစီးစွာ တီဘီရှိမှန်းသိ၍ ကုသမှုသည် ရောဂါပျောက်ကင်းမှုကို မြန်စေပါသည်			
၃	အချိန်မီဆေးကုသခြင်းဖြင့် တီဘီရောဂါ၏ ဆိုးကျိုးများကိုကာကွယ်နိုင်သည်(ဥပမာအဆုတ်ရေဝိုင်းခြင်း)			
၄	ညွှန်ကြားထားသည့်အတိုင်းပုံမှန်ဆေးမသောက်ခဲ့လျှင် ဆေးမတိုးသောတီဘီရောဂါ ဖြစ်နိုင်သည်။			
၅	နောက်ကျမှ ဆေးကုခြင်းက တီဘီရောဂါပျံ့ပွါးမှုကို မတိုးပွါးစေပါ ။			
၆	တီဘီကိုစောစောကုလျှင် ငွေကြေးကုန်ကျမှု ပိုသက်သာသည်။			

**တီဘီကုသရေးနှင့် ပတ်သက်၍သင်အကြံပြုလိုသော အချက်များရှိက ပြောနိုင်ပါသည်။

ပြီးဆုံးချိန် ---------- လက်မှတ် ----------မေးမြန်းသူ----------

ကိုယ်တိုင်ဖြေကြားရန်သဘောတူညီချက်

ဤမေးခွန်းလွှာသည် မြန်မာရွှေ့ပြောင်းအလုပ်သမားများ တီဘီရောဂါကုသရန် နှောင့်နှေးကြန့်ကြာသည့်အကြောင်းကိုလေ့လာခြင်းဖြစ်သည်။နောင်အခါတီဘီရောဂါဖြစ်ပွါးမှုကိုစောစီးစွာရှာဖွေသိရှိပြီးထိရောက်ပြီးပြတ်သောကုသမှုရရှိနိုင်ရန်ဦးတည်ပါသည်။စာတမ်းရှင်၏ထိုရည်ရွယ်ချက်ကိုကျွန်ုပ်အနေဖြင့် ကောင်းစွာသဘောပေါက်ပြီး လွတ်လပ်သောဆန္ဒဖြင့် ပါဝင်ကူညီဖြေဆိုပေးခြင်း သာဖြစ်ပါသည်။

မိမိ၏ဖြေကြားချက်များအတွက်

(၁) လက်ရှိအလုပ်အကိုင်၊နေထိုင်မှုနှင့်ဆေးဝါးကုသမှုအခြေအနေများကိုလုံးဝမထိခိုက်နိုင်ကြောင်း

(၂) ဖြေကြားမှုများကိုသီးသန့်သိမ်းဆည်းပေးထားပြီးဤစာတမ်းအတွက်သာလေ့လာအသုံးပြုမည်ဖြစ်ကြောင်း

(၃) မရှင်းလင်းသည့်အချက်များကိုပြန်လည်မေးမြန်းနိုင်ခွင့်ရှိကြောင်းနှင့်ဖြေကြားချက်များကိုဆန္ဒအလျောက်အချိန်မရွေးပြန်လည်ရုပ်သိမ်းခွင့်ရှိကြောင်းတို့ကိုသိရှိပါသည်။

လက်မှတ်----------

အမည် ----------

နေ့စွဲ ----------

A team of doctors and nurses from Mae Chan Hospital, namely Drs.Sudanee, Nunthana, Chotipong and Ms.Wipaporn joined lunch with several people living with HIV, including a TB patient who were treated a few months ago. The health care team wanted to demonstrate that TB patients (regardless of HIV status) who have been on TB treatment for more than 3 weeks and who show improved clinical symptoms do not transmit TB to others. Therefore, these patients should not be shunned by other people.

BIOGRAPHY

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