A TUBERCULOSIS CONTROL PROGRAM FORMULATION, THROUGH A COMMUNITY PARTICIPATION APPROACH, IN THE URBAN SLUM KLONG TOEI COMMNUNITY IN BANGKOK, THAILAND

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OBJECTIVES: 1) To develop a community partnership that comprises of representatives from various groups in the community to participate in study process. 2) To describe the nature and extent of existing health services for the community residents. 3) to determine the TB perception of community residents and TB patients. 4) to describe health seeking behavior of community residents and TB patients 5) to determine TB service needs and the utilization of TB services of the community residents and TB patients. 6) to develop an action plan to improve the effectiveness of TB control program, through community participation.

METHODS: The study was conducted in urban slum in Bangkok**,** the city of Thailand with some of the high rate of TB and HIV including IDU**.** This study used a participatory approach which adopted a descriptive design with employed both quantitative and qualitative methods. Community partnership was developed to participate in the process of study.

RESULTS: 1) The community partnership which comprised of the representative of community leaders, youth groups, house wives groups, former TB patients, Community based Organization and health service providers, was developed in defining and resolving the TB problems. 2) TB services relied on passive case detection. Health center-based DOT was more likely a barrier for access to services since burden of patients, too sick to come and limitation of official services time. Good communication and relationship of health care provider including free of services motivated patient's adherence to treatment. However, there were gaps, fragmentation, and redundancy in the existing health services which might result in delay in TB treatment. 3) Most of respondents would buy drug from drug store if they had cough and fever. Patients confused the initial TB symptoms with common cold. The respondents had several misperceptions of TB, especially the relationship of TB and HIV/AIDS. Multivariate analysis found the relationship between age and their perceptions. Furthermore, high perceived stigma was found in TB patients than actual stigma. Psychological effects we found in patients who had high perceived stigma. Social stigma attached HIV/AIDS, TB and IDU were correlated. "Wearing mask" was considered as disgusting symbolic or make them difference. Social support was dominant for treatment adherence. 4) Finally, Partnership could develop TB control strategies planning for Klong Toei community.

CONCLUSION: Develop TB control planning needs to consider both medical and social dimension since they are equally important and inter-related. The local health system development should be contributed not only the involvement of the local public health authority but also local community, participation of TB patient, people living with HIV/AIDS including profit and non-profit private sector and the technical assistance from academics or TB experts will make possible effectiveness of TB control program.

Student's signature _____

Field of study Public Health Advisor's signature _____

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ดาเรศ ชูศรี : การมีส่วนร่วมของชุมชนในการวางแผนงานโครงการควบคุมวัณโรคในชุมชนแออัดคลองเตย กรุงเทพฯ ประเทศไทย (A TUBERCULOSIS CONTROL PROGRAM FORMULATION, THROUGH A COMMUNITY PARTICIPATION APPROACH, IN THE URBAN SLUM KLONG TOEI COMMNUNITY IN BANGKOK, THAILAND) อาจารย์ที่ปรึกษา: รองศาสตราจารย์ ดร.สถิรกร พงศ์พานิช, อาจารย์ที่ปรึกษาร่วม: ศาสตราจารย์ ดร.สุภางค์ จันทวานิช, 222 หน้า

วัตถุประสงค์ เพื่อ1) พัฒนาให้เกิดภาคีความร่วมมือซึ่งประกอบด้วยผู้แทนจากกลุ่มต่างๆในชุมชนให้เข้ามาร่วมในกระบวนการศึกษาวิจัย 2) ศึกษาลักษณะของการให้บริการด้านวัณโรคของหน่วยงานต่างๆในชุมชน 3) เพื่อสำรวจการรับรู้และปัจจัยที่มีอิทธิพลต่อการรับรู้เรื่องวัณโรคของประชากรในชุมชนและผู้ป่วยวัณโรค. 4) ศึกษาพฤติกรรมการแสวงหาการรักษาด้านสุขภาพของประชากรในชุมชนและผู้ป่วยวัณโรค 5) ศึกษาถึงการใช้และความต้องการบริการด้านวัณโรคของประชากรในชุมชนและผู้ป่วยวัณโรค 6)พัฒนาแผนการดำเนินงานควบคุมวัณโรคโดยการมีส่วนร่วมของชุมชน

วิธีการศึกษา:การศึกษาเชิงพรรณนานี้ใช้รูปแบบการวิจัยแบบมีส่วนร่วมจากประชากรในชุมชนแออัดของกรุงเทพฯที่ทำการศึกษา ซึ่งเป็นพื้นที่ที่มีความชุกของวัณโรค เอดส์ และการใช้ยาเสพติด โดยได้ศึกษาทั้งเชิงปริมาณและคุณภาพ ภาคีความร่วมมือชุมชนได้ถูกพัฒนาขึ้นเพื่อเข้ามามีส่วนร่วมในกระบวงนการศึกษา

ผลการศึกษา เกิดภาคีความร่วมมือซึ่งประกอบด้วยผู้แทนจากกลุ่มต่างๆคือ ผู้นำชุมชน กลุ่มเยาวชน กลุ่มแม่บ้าน อดีตผู้ป่วยวัณโรคที่รักษาหายแล้ว องค์กรชุมชนและผู้ให้บริการสุขภาพจากภาครัฐ ได้เข้ามาช่วยค้นหาและแก้ไขปัญหาวัณโรคร่วมกัน การบริการด้านวัณโรคของภาครัฐในชุมชนที่ทำการศึกษามีลักษณะของการตั้งรับโดยใช้ศูนย์บริการสาธารณสุขเป็นศูนย์กลางการให้บริการ ซึ่งอาจจะก่อให้เกิดอุปสรรคกับการเข้าถึงบริการในแง่ของเวลาที่ให้บริการตามเวลาราชการ และกรณีผู้ป่วยมีอาการมากอาจจะไม่สามารถมารับยาได้ทุกวัน แต่การสื่อสารและมนุษย์สัมพันธ์ที่ดีของผู้ให้บริการรวมทั้งการบริการที่ไม่คิดมูลค่าเป็นปัจจัยที่ดึงดูดให้ผู้ป่วยวัณโรคมารับยาอย่างต่อเนื่อง อย่างไรก็ตามยังมีช่องว่าง การแตกแยก และความซ้ำซ้อนของบริการด้านวัณโรคซึ่งอาจจะส่งผลให้เกิดความล่าช้าในการรักษาวัณโรค กลุ่มตัวอย่างจะซื้อยาจากร้านขายยารับประทานเองเมื่อมีอาการไอหรือเป็นไข้ เพราะผู้ป่วยมักจะมีความสับสนอาการเริ่มแรกของวัณโรคกับไข้หวัด ทั้งยังมีการรับรู้เกี่ยวกับวัณโรคที่ไม่ถูกต้องในหลายเรื่องโดยเฉพาะอย่างยิ่งความสัมพันธ์ระหว่างวัณโรคและเอชไอวีเอดส์ การวิเคราะห์หลายตัวแปรพบว่าอายุของกลุ่มตัวอย่างมีความสัมพันธ์กับการรับรู้เรื่องวัณโรค นอกจากนี้การศึกษายังพบว่าผู้ป่วยวัณโรคมีความรู้สึกว่าถูกตีตราจากสังคมมากกว่าความเป็นจริง ซึ่งจะส่งผลกระทบต่อด้านจิตใจ ยิ่งมีความรู้สึกว่าถูกตีตรามากเท่าใดก็จะยิ่งส่งผลต่อด้านจิตใจมากเท่านั้น การตีตราของสังคมในเรื่องเอชไอวีเอดส์ วัณโรคและผู้ใช้ยาเสพติดมีความเกี่ยวข้องซึ่งกันและกัน ผู้ป่วยวัณโรคมองว่าการใช้หน้ากากอนามัยเป็นสัญญลักษณ์ของความน่ารังเกียจหรือทำให้พวกเขาดูแปลกแยกแตกต่างไปจากคนทั่วไป การสนับสนุนจากสังคมเป็นปัจจัยสำคัญที่ทำให้ผู้ป่วยมารับการรักษาอย่างต่อเนื่อง และภาคีความร่วมมือที่ได้พัฒนาขึ้นสามารถที่จะวางแผนการควบคุมวัณโรคเพื่อชุมชนคลองเตยได้

สรุป การพัฒนาแผนงานโครงการควบคุมวัณโรคจำเป็นต้องพิจารณามุมมองทั้งในมิติทางการแพทย์และสังคม เพราะต่างมีความสำคัญไม่ยิ่งหย่อนกว่ากันและยังมีความสัมพันธ์ซึ่งกันและกัน การพัฒนาระบบสาธารณสุขในท้องถิ่นไม่ควรดำเนินการโดยหน่วยงานสาธารณสุขเพียงลำพังเท่านั้น แต่ควรมีส่วนร่วมจากชุมชนท้องถิ่น ผู้ป่วยไข้วัณโรค ผู้ติดเชื้อเอชไอวี ตลอดจนองค์กรพัฒนาเอกชนและภาคธุรกิจเอกชนซึ่งควรได้รับการสนับสนุนทางด้านวิชาการจากนักวิชาการหรือผู้เชี่ยวชาญด้านวัณโรค อันจะนำไปสู่การควบคุมวัณโรคที่มีประสิทธิผล

ลายมือชื่อนิสิต _____

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LIST OF CONTENTS

Page

Page

Page

Page

Page

Page

Page

Page

LIST OF TABLES

Page

Page

Page

LIST OF FIGURES

Page

ABBREVIATION

AIDS	Acquired Immune Deficiency Syndrome
BCG	Bacillus Calmette-Gue'rin (anti-TB vaccine)
BMA	Bangkok Metropolitan Administration
CBO	Community-Based Organization
CDC	Centers for Disease Control (Atlanta, USA)
CHV	Community Health Volunteer
CCTB	Community Committee on Tuberculosis
CTV	Community Tuberculosis Volunteer
DOTS	Directly Observed Therapy, Short- course
DPF	Duang Prateep Foundation
FGD	Focus Group Discussion
GO	Government Organization
HC	Health Center
HCW	Health Care Worker
HIV	Human Immunodeficiency Virus
IDU	Injecting Drug User
MoPH	Ministry of Public Health
NGO	Non-Governmental Organization
NTP	National Tuberculosis Programme
OPD	Out Patient Department
PLWHA	People living with HIV/AIDS
TB	Tuberculosis
TB/HIV	TB and HIV co-infection
WHO	World Health Organization

CHAPTER I

BACKGROUND AND SIGNIFICANCE

1.1 Introduction

Today, almost six decades after the introduction of chemotherapy for tuberculosis (TB), but TB prevalence is still increasing worldwide. Since TB is widespread and contagious via the respiratory tract, everyone is at risk (Rom & Garay, 1996). Although, TB is a communicable disease, it can be both preventable, and curable- even in people living with HIV/AIDS. This chapter describes and provides the information regarding the global situation of TB, in Bangkok, in Thailand and, as well the reasons of community participation, purpose of intervention, study approach including implication of the research results.

1.2 Situation of Tuberculosis

1.2.1 Global Situation

Approximately one third of the world's population is infected with Mycobacterium tuberculosis. In 1993, the World Health Organization (WHO) declared TB a "Global emergency". WHO estimates that 9.27 million new cases of TB occurred in 2007 (139 per 100 000 population). Of these 9.27 million new cases, an estimated 44% or 4.1 million (61 per 100 000 population) were new smear-positive cases . It is estimated that, in 2007, there were 1.37 million incident cases of HIV-positive TB (14.8% of total incident cases) and 456 000 deaths from TB among HIV-positive people (WHO, 2009) 75% of TB cases in developing countries are in the economically productive age group (15-50 years) (Harries & Maher, 1996). The

situation is getting worse due to the HIV epidemic, since HIV promotes TB progression from primary as well as latent infection to active tuberculosis (Raviglione et al., 1995). HIV-related tuberculosis is common in various populations, especially in sub-Saharan Africa and, increasingly, in Asia and South America (Harries & Maher, 1996).

Responding to the TB crisis, WHO has developed a global plan to stop tuberculosis which has the brand name DOTS (Directly Observed Treatment Short-course) as the TB control strategy since 1994. DOTS comprised of five major components, namely: political commitment and resources; accurate TB diagnosis using microscopy; regular drug supply; recording, reporting and Directly Observed Therapy (DOT). The Targets for global TB control, ratified by World Health Assembly are to treat successfully 85% of detected smear-positive TB cases, and to detect 70% of all such cases. Although, WHO recommend to use DOTS as a strategy of TB control, which is based on active case holding with supervision of the intensive phase and efficient monitoring of the out come of treatment (Godfrey-Faussett, 1998). These targets were not reached by the end of year 2000 as originally planed. The target year has been re-set to 2005 (WHO, 2003). Furthermore, the Global Alliance on TB Drug Development, TB diagnostics initiative and vaccine development initiative have recently emerged in response the TB global crisis. It aims to reduce mortality, morbidity and transmission of the disease and preventing drug resistance. To achieve these objectives, it is necessary to ensure that TB patients have access to diagnosis and complete their full treatment, (particularly cure) in order to prevent drug-resistant forms (WHO, 1997).

1.2.2 Tuberculosis in Thailand

Thailand is a low middle-income country in South east Asia, with the area of 513,115 square kilometers. Thailand is located in the center of South East Asia, with the Union of Myanmar on the West and China on the North and with the Democratic Kampuchea and the Democratic People's Republic of Laos on the Noth-East and East, and Malaysia on the South. The whole area is divided into four geographical regions: Northern, North Eastern, Central and Southern regions (Payanandana et al., 1995). Ethnic groups comprise of Thai (75%), Chinese (14%), and others (11%). They are Buddhists (95%), Moslems (4%), and other (1%). The official language is Thai. People living in the North, northeast and south have different local dialects. Thailand has 76 provinces, 795 districts, 81 sub-districts, 7255 tambols and 69, 866 villages in 1999 (National Statistic Office, 2000).

The epidemiological data indicate that Tuberculosis (TB) continues to be a major health threat in Thailand, despite the availability of effective treatment regimens In 1964, WHO recommendation for developing countries to implement a NTP (National Tuberculosis Programme), the MOPH (Ministry of Public Health) implemented the NTP in Thailand in 1967 (Payanandana et.al.,1999). DOTS has been adopted in Thailand as a control strategy for tuberculosis since 1996. Although NTP has integrated TB program to local public health service and promoted the priority to district TB control as key area of TB control, in 2006, Thailand ranked 17th globally of 22 high TB burden countries, with an estimated 90,250 new TB cases occurring (WHO, 2008). In urban areas, case detection and treatment success rates have not improved substantially over the past 5 years (WHO, 2008). Moreover, the estimated prevalence of MDR-TB (Multidrug-Resistant TB) in new patients increased

from 1% in 2002 to 1.7% in 2006 (Jittimanee, 2008). TB Case notifications began rising in the 1990s co-incident with an explosive epidemic of HIV. Although the WHO estimated that 7.6% of incident TB cases in persons aged 15-49 were HIV infected in 2005, a special MOPH project found that 185 (17%) of 1086 new adult TB patients were HIV-infected in 12 large public hospitals in all regions of Thailand in 2006 (Jittimanee, 2008).

1.2.3 Tuberculosis in Bangkok

Bangkok, the capital of Thailand located in the central region which is a low plain and 2.31 metres above sea level. It is divided into 38 districts and 154 sub-districts with 1,568,737 squares kilometers. The average temperature is 28.5C (Bangkok Metropolitan Administration [BMA], 1997). Bangkok is an autonomous municipal capital city of Thailand. Public health services are provided through the BMA (Bangkok Metropolitan Administration) system consisting of sixty health centers and nine large public hospitals, which also serve as basic management units for TB control. TB services are still widely available at various healthcare facilities, including those operated by the government (e.g. military, police), those partially supported by government (e.g. universities), and those operated by the private sector. Outside the BMA system, TB patients are regularly charged fees for both diagnosis and treatment. Among these various health care facilities, there is no consensus on a method of TB control (Department of Health, BMA, 2001). About one-sixth of the population in Thailand lives within the Bangkok metropolis area (estimated around 11 million). This means about twenty percent of people in Thailand with TB live in the capital city.

1.3 Why TB is Still a Huge Problem in Public Health?

The incidence of tuberculosis has been increasing worldwide for various reasons resulting in TB as still an important problem in public health. Those factors are summarized as follows:

1. A person who has HIV and TB infections has a risk of developing TB of about 10% every year- compared with 10% per lifetime for some one infected with TB but not HIV (WHO, 1999)

2. Inappropriate treatment regimens prescribed by private- and public-sector physicians (Marmot et al., 2000) that may contribute to treatment delay and or increase Multiple-drug-resistant (MDR).

3. Non compliance in patient medication is the biggest problem in TB control, and is a complex issue. Many patients start treatment but never finish it and develop a rising incidence of Multi-drug resistant TB (MDR-TB) (WHO, 1999). These factors are major components in the complex circumstances that make it more difficult for prevention and control of TB among disadvantaged groups in the community (Marmot et al., 2000).

4. Populations are still growing. And even if we could break the chain of the transmission right now, people will develop TB for many more years to come as they were infected in the past (WHO, 1999). Furthermore, immigration of TB patients and or immigration of persons from countries with a high incidence of resistant TB result in TB spread from one person to an other or from one place to other places.

5. TB is a disease that is widespread and closely associated with poverty, poor housing (especially in urban areas), lack of formal education, low per capita income and lack of gainful employment, all of which are more common among slum dwellers

(Ogden et al., 1999). Overcrowding has a particularly strong influence on the spread of infection (Beggs,2003).

6. The drug was not being adequately absorbed or the bacilli were, or had become, resistant to drug. Another important cause is insufficient duration of chemotherapy to eliminate the bacilli (Crofton, 1980).

1.4 Why Community Participation?

Currently, there is renewed interest in the role that community participation can play in Primary Health Care (PHC) programmes such as the delivery of effective anti-TB treatment to patients in high-burden settings. One-third of the TB patients in South Africa received their treatment from lay volunteers in the community. Treatment outcomes for new patients supervised from the community were found to be equivalent to those who received treatment through other modes of treatment delivery. For the re-treatment patients, community-based treatment were found to be superior, to self-administered therapy. Health care planners should consider community participation as a viable way of ensuring accessibility and effectiveness in PHC programmes (Kironde & Kahirimbanyi, 2002).

The report of Freudenberg (1995) in the United Sated pointed that it is difficult for health care agencies to identify (contacting and engaging) those with active tuberculosis and to ensure that these individuals complete their medical treatment. The other point is it fails to address the broader social factors that have contributed to the reemergence of epidemic tuberculosis. This report provided suggestion that community organizations can carry out and play a significant role in order to control TB.

The study of Maher et al. (1999) revealed the successful of community approaches to TB care as below;

Table 1.1: Community contributions to tuberculosis care

Country	Setting	Treatment supervisor	Results
Philippines	2 rural slums and 1 urban slum	Lay volunteers	90% cure rate
Philippines	City of Manila (urban)	Church group volunteers	80% success rate
Bangladesh	17 sub-districts (rural)	Community health workers	>85% cure rate
Haiti	Artibonite Valley (rural)	Lay persons and former TB patients	87% success rate
South Africa	Western Cape, Klein Drakenstein (rural)	Farm workers and volunteers	High rates of treatment adherence
South Africa	Kwazulu Natal, Hlablisa District (rural)	Community health workers, lay persons, volunteers	>85% success rate in survivors
Nepal	4 national demonstration centres (rural)	Community workers, social workers	85% cure rate
Indonesia	North and central provinces of Sulawesi (rural)	Health workers and women's organization volunteers	88% cure rate
China	12 provinces (rural and urban settings)	Village doctors	90% cure rate in new cases

In Thailand, the record and study of community participation in TB control is very limited. The actual, both global and national, strategies for tuberculosis prevention and control program mostly relying on medical approach. These strategies are case-finding and treatment of clinical tuberculosis cases, preventive therapy for TB risk group, BCG vaccination and environmental TB control (WHO, 1999). WHO recommend the use of DOTS as a strategy of TB control which is based on active case holding with supervision of the intensive phase and efficient monitoring of the out come of treatment (Godfrey-Faussett, 1998). TB is not only a problem for the individual but also for the community's. Even if that DOTS strategy is well applied,

ongoing transmission of infection occurs before patients present to the diagnosis centers (Godfrey-Faussett, 1998). Thus, community participation approach will be another alternative intervention for TB control.

1.5 Why TB and Community Participation

Although vaccination, chemoprophylaxisc and chemotherapy are available for TB prevention and control, when "a person is sick with TB and not properly treated that person will likely infect ten to fifteen people in a year". (WHO, 1996) Because "Tuberculosis is more than biology; it is a statement about society." "Tuberculosis is a social disease with a medical aspect." (William Osler cited in Grzybowski & Allen, 1999). The advances in drug therapy have produced spectacular results, and scientific advances at the most basic level and have broadened our understanding of this disease. But the elimination of TB requires much more: it requires above all official and voluntary action, it requires that patients comply with all elements of control, and it requires the betterment of those marginalized in society (Grzybowski & Allen,1999) "A strategy for TB elimination needs to refocus and take account of the fact that Mycobacterium tuberculosis remain dormant in a high proportion of those infected; the low probability and long latent period between infection and disease means that most of those infected do not have the disease but retain the probability of developing the disease throughout their lifetime. Thus, an elimination strategy focused on the sources of infection must be sustained over a long period of time" (Enarson, 2000)

1.6 Purpose of Intervention

Participation is the heart of social development in a democratic society. Since the participatory approach aims to develop the capacity of involved humans through effective action. The importance of community participation in health development programs, the emphasis on enabling communities to make them concerns of their health or control over their health. Although involving the community is not a new concept, developing participation programmes with the community required a number of competencies. In this study, the “community participation” (through partnership) approach is proposed as a process to enhance TB control programme in Klong Toei congested urban community. This project attempts to emphasize the community participation from various groups; community organizations, community leaders, housewife groups, youth groups, community health volunteers, former TB patients and health providers, working together to formulate TB control program planning.

1.7 Study Approach

This study approach applied a participatory concept and community participation approach to develop TB control programme planning which consists of three phases. Phase I; Preparation Phase: Community Assessment was to gather information about the global and local situation and problems of TB including the respond to those problems by reviewing literature from an electronic database and other available resources. Community assessment was also reviewed to determine the entry point and identified prime movers, through relevant community groups, including physician and nurse of health center, then, invited them to participate. The community representatives from various groups will be invited to form as TB

committee and working group. A strengthening capacity for partnership was also built at this stage. Phase II ; Data Collection: Community Participation, aimed to gain a better understanding of existing TB gaps, and needs in services Together with partnerships, we explored the problems related to health seeking behavior, TB perception, TB prevention and care of TB clients and community residents , including the barrier to the access of treatment of TB patients. Both qualitative and quantitative study methods were used in this second phase. Phase III; Evaluation: Building a Plan includes development of a strategy for intervention, and a plan of action also its evaluation. A workshop was conducted for partnership to develop TB control programme planning. Findings from the second phase study were used as an input for partnership making decisions. These activities will result in increase ownership, acceptance and adherence in planning implementation.

1.8 Implication of the research results

The specific outcomes are expected as follows:

1. Understanding in TB perception, seeking behavior, utilization of services and patterns of community residents and TB patients, in the congested urban community, in order to provide information for policy maker/ development, program managers, service providers, and community residents.

2. To provide more in-depth understanding, of the relevant factors which facilitate or obstruct the use of certain types of health services, by TB patients.

3. Explanation of factors contributing to the practice in TB prevention and care of the community, also members and TB patients in a congested urban community

4. To provide valuable insights, regarding how best to improve the TB control in a congested urban community.

5. An appropriated TB control program that was developed by community partnership will improve the effectiveness of TB control in study community.

6. Results used as a case study to advocate policy development/re-enforcement, decision makers, NGOs for revision of TB services.

CHAPTER II

LITERATURE REVIEW

2.1 Introduction

Although many Asian countries had considerable experience in community contribution to TB care, the documented experience in countries in Asia is scanty (Sharma, 2002). This also in Latin America (Jaramillo, 2002). Thus, this chapter reviews the key concepts of the study, i.e. community, participation, community participation and background of study community. Summary and conclusions based on suggestions from previous studies are also included.

2.2 Tuberculosis (TB)

2.2.1 What is Tuberculosis?

TB is, one of the oldest diseases known to mankind (Armstrong, 1996). The most frequent organism involved in human disease is *Mycobacterium Tuberculosis.* This organism is also known as tubercle bacilli (because it cause lesions called tubercles) or as acid-fast bacilli (AFB). Tubercle bacilli can remain dormant in tissues and can persist for many years (Harries & Maher, 1996). TB germs remain alive for up three years in a closed environments (WHO, 1996). *Mycobacterium Tuberculosis* can attack any part of the body, but usually attacks the lungs (Ministry of Public Health [MOPH], TB Division, 1994). TB cases are classified as either pulmonary or extra-pulmonary (WHO, 1993b; Harries & Maher, 1996).

2.2.2 TB Symptoms

TB is a gradual onset and develops non-specific signs of infection such as flu-like symptom, low grade fever. Most common symptoms when PTB patients come to see physician are chronic cough for more than two weeks and/or chest pain when coughing with or without haemoptysis (haemoptysis shows in three forms; blood splitting, blood streaked sputum or massive haemoptysis), weight loss ,fatigue, malaise, loss of appetite, pale skin, fever and or night sweats. Symptoms of TB disease may last for several weeks if not treated, It can progress to a severe disease and may cause death.

2.2.3 TB Transmission

TB can spread by the respiratory tract, which is the most common way of infection. When a person is sick with TB-and not properly treated-that person will likely infect ten to fifteen people in a year (WHO, 1996). It is spread as airborne particles in the form of tiny infectious droplets or droplet nuclei from the infected patient by coughing, sneezing, laughing and speaking (Colice, 1995). One cough can produce 3,000 droplet nuclei (Harries & Maher, 1996; MOPH, TB Division, 1994). Approximately 1-10 μm particles spread and inhaled by people nearby. If clinical TB patient coughs 10 times/hour, in each time of coughing contains 500 particles and 2% of those particles contain TB. 1 particle contains TB germs will in 10x10 $feet^3$/hour, normal people will breath10 $feet^3$ of air/45minutes, so every 45 minutes people will have chance to breath particles containing TB germs (Earnest & Sbarbaro, 1995). These small particles can pass through alveoli and lead to inflammation and infection (Colice, 1995). Within 2-10 weeks after infection, Cell Mediated Immune (CMI) of the host reacts against TB. Most of TB is destroyed by CMI except the virulent strain

which can be reactivated again when the hosts immune system is impaired (MOPH, TB Division, 1994).

2.2.4 The Dynamic of Transmission

The microorganism enters the environment as an aerosol, any susceptible individual who is exposed, becomes infected, and may subsequently develop this disease, which may be contagious, thus passing the organism to others. The individual remains contagious for a limited period of time, during which transmission may occur. This period is limited either by the death of individual or the suppression of growth of the microorganism in the body (as when the patient is cured). The key transitions in maintaining the cycle are (1) from exposure to infection, (2) from infection to disease, (3) from disease to exposure (Enarson, 2000).

2.2.5 Key Determinants

Key determinants in the transition from exposure to infection are the concentration of droplet nuclei in the contaminated air (environment), the degree of susceptibility of the exposed, and the duration of exposure to droplet nuclei (Enarson, 2000). The risk of infection of a susceptible individual is, therefore, high with closeness, prolonged exposure to a person with sputum smear-positive PTB and the length of time he breathes that air. Transmission generally occurs indoors, where droplet nuclei can stay in the air for a long time (Harries & Maher, 1996).

The key determinant in the transition from infection to disease is the state of immune system of individual infected. Key determinants in the transition from disease to being contagious are the number of bacteria in the lung and their access to the airways. (Enarson, 2000). (see figure 2.1)

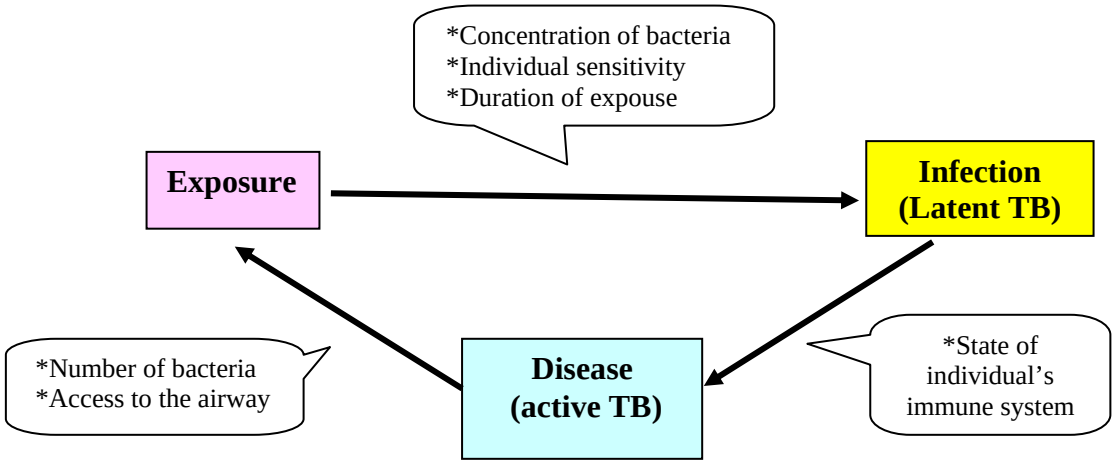


Figure 2.1: Diagrammatic presentation of dynamic and key determinants of TB transmission

Source: Summarized from statement of Enarson, 2000

The probability of transition from exposure to infection varies, on average, from slightly more than 25% in a person living in the same household, as a case with sputum smear positive tuberculosis, to about 12% for a friend or colleague of such a case. The probability of transition of infection to disease in this setting is less than 15% (Grzybowski et al., 1975; Enarson, 2000).

2.2.6 TB Infection Versus TB Disease

People can be infected with TB without developing the TB disease. The vast majority (90%) of people without HIV infection who are infected with M. tuberculosis do not develop tuberculosis disease. In these healthy, asymptomatic, but infected individuals, the only evidence of infection may be a positive tuberculin skin test (Harries & Maher, 1996), but is usually not able to eliminate the infection without taking an anti-tuberculosis drug. This condition referred as **"**latent tuberculosis infection". Persons with latent tuberculosis infection are asymptomatic and do not

spread TB to others. About 10% of healthy people who have a latent tuberculosis infection will be come ill with active TB at some time during their lives, when their body defense systems becomes weak if they do not receive preventive therapy (Stine, 1996). 5% will develop clinical TB within 2 years and 5% will develop clinical TB over the rest of their life. (Chavalitthumroung, 1984; MOPH, TB Division, 1994). The mechanisms of this post primary TB is called endogenous reactivation which is reactivation of TB from primary TB (latent TB infection). Another kind of post primary TB is called exogenous super infection, which is clinical TB cause by a new strain of TB in previously TB-infected patients.

People with any of the following conditions are at risk of developing tuberculosis; substance abusers, alcoholics, intravenous drug users (IVDUs), people with medical conditions which weaken the immune system (i.e. diabetes mellitus, silicosis, cancer, leukaemia, severe kidney disease, malnutrition, leukemia), illness requiring intake of certain medical treatments such as steroids, babies, young children and old people often have weak immune systems, as well as HIV infected persons (Rojanapithayakorn & Narain, 1999).

2.2.7 TB Prevention and Treatment.

BCG (Bacilli Calmette-Guerin) vaccination is a live attenuated vaccine derived originally from M.bovis (Harries & Maher, 1996). This vaccine is capable only of limiting the dissemination of the microorganism within the body after infection (Sutherland & Lindgren, 1979). The benefit of BCG is in protecting young children against disseminated and severe TB (Harries & Maher, 1996). BCG cannot protect against the exogenous re-infection of TB in adults.

INH (Isoniazid is one kind of TB medicine.) preventive therapy that will be given to prevent the progression of individuals with latent tuberculosis to develop to active TB. For curing TB, patients have to adhere to a TB short course regimens of up to 6 months duration with Directly Observed Therapy Shortcourse (DOTS), which the patients ingest or take with their therapy in the presence of a health care worker or patients' family members.

2.2.8 Principle of TB Prevention

The strategies for tuberculosis prevention and control programs are as follows;

- BCG Vaccination.
- Case-finding and treatment of clinical tuberculosis cases.
- Chemoprophylaxis or preventive therapy for TB risk group. Chemoprophylaxis is expected to protect the individual, but not to have an immediate impact on transmission.
- Environmental TB control is expected to prevent the spread of infection, by patients isolation, staff prevention, decrease the concentration of infectious droplet nuclei, and engineering control by using a high efficiency particle air (HEPA) filter, ultraviolet germicidal irradiation (UGI) and general ventilation. (Ungsetthapan & Ruxrungtham, 1998).
- Improvement of socio-economic conditions which is the most profound effect on reducing the disease load, as TB is intimately associated with poverty and deprivation.

2.3 What are the Problems and Solutions Related to the Existing TB Control Programmes?

In Thailand, the prevalence and the incidence of TB started to decline around 1985, mainly due to the implementation of short course regimens and improved therapeutic coverage and efficacy. This trend continued until 1991, when it appeared to revert to a new trend of increase, starting with a 2% average annual rise in the rates of new TB cases during 1992-1997.

In 1998, Bangkok Metropolitan Administrative (BMA) started the DOTS strategy for TB control programmes with some BMA health centers which followed the principle of WHO and National Tuberculosis Programme (NTP). The goal of case finding for the clinical active TB cases is at least 70% of total cases and cured rate of 85%. Later in the year 2000, BMA expanded the DOTS strategy to 61 BMA health center (Department of Health, BMA, 2001).

Although the NTP has begun to introduce Public-Private approach activities and to address the specific challenges posed by border areas and urban areas, case detection and treatment success rates have not improved substantially over the past 5 years (WHO, 2008). The case detection rate reached 72% in 2007, and the treatment success rate improved to 77% in 2006. Reasons why the treatment success rate is below the global target of 85% include high default and mortality rates, and incomplete reporting from care providers in Bangkok. (WHO, 2009)

The Ministry of Public Health of Thailand has initiated the Village Health Volunteer as a tool for community participation in health development since the fourth development plan. However, too many tasks are assigned to Village Health Volunteer. Sometimes, tasks do not have a clear priority and there is a lack of

consistent supervision and rarely participate in the decision-making process. Also there are not enough health workers. All of these may lead to provide ineffective coverage. Community and family are considered important social units on compassion and caring aspect.

Thai National Tuberculosis Program (NTP) has integrated with the local public health service. The strategy of NTP as follows (Akrasewi, 2001):

1. Develop access to service of PLWHA and improve service quality and efficacy.
2. Apply DOTS to be accessible for PLWHA with flexibility.
3. Use the counseling service for case finding and continuum of care.
4. The fourth strategy, one of seven important strategies of NTP, is the integration of TB and HIV/AIDS comprehensive and continuum of care through the patient centered management in the community.
5. Multi-sectoral collaboration for TB surveillance, research and development.
6. Preventive treatment of latent Tuberculosis infection with Isonoazid preventive therapy.
7. Extended preventive treatment for other Important opportunistic infection by using the management and administrative mechanism same with TB.

2.4 What Factors Enhance or Act as Barriers to Effective TB Control?

2.4.1 Health Care Delay

Ongoing tuberculosis transmission occurs during delays in diagnosis and in starting treatment, which may occur even in relatively well organized national tuberculosis programmes. A study in China revealed that delays and multiple visits

mainly occurred because of the limited capacity of health providers to recognize TB, and financial disincentives to refer patients to TB dispensaries, due to the pressures of the cost recovery system (Yan et al., 2007).

2.4.2 Poverty

Many studies have suggested that poverty, poor nutritional status, homelessness, substance abuse, physiological stress and crowded living conditions an overcrowded unsanitary environment are inextricably linked and all these increase the risk of TB (Schoeman et al., 1991; Spence et al.,1993; Dholakia, 1996; Marmot et al., 2000). There are studies that clearly indicate the income loss on account of work days lost, money spent on diagnosis and debts on account of treatment for TB. The adverse effects of TB were greatest for poor people, mainly because their income depends exclusively on physical labour. In addition, a good number of patients face the threat of rejection from the family members on account of his/her illness (Rajeswari et al., 1999; Geetharamani et al., 2001). A study in China (Xu, et al., 2004) also found that financial difficulties influence health care-seeking behavior of TB patients.

2.4.3 Non-adherence to treatment

Three categories of factors may put patients at risk for non-adherence (CDC, 1995):

1. Patient factors. TB patient delay in seeking care, non compliance and adherence for the following reasons:.

- Erratic drug taking resulting in drug-resistant forms of the disease, continued
- infectiousness, and progression of disease.
- Belief that the treatment is inappropriate or ineffective.
- Fear of losing work time or even losing their jobs.

- Substance abuse, mental, emotional or physical impairment and homelessness
- Inadequate knowledge or misinformation about TB, including beliefs that TB testing and treatment may increase their risk of HIV infection or that TB is hereditary, creates barriers to TB screening and care.
- HIV status
- Social and economic factors. HIV persons experience major life problems, such as threatened loss of housing or children. With these problems, the threat of TB, may be perceived as less important.
- Movement to other hospitals or location.
- Previous non-adherence
- Admitted non-adherence (a stated intention not to be adherent)
- Misunderstandings and lack of knowledge of TB create barriers both to seeking care and continuing care for TB.

2. System or structural factors

- Quality and availability of TB control
- Methods of treatment delivery
- Deficiency in treatment delivery
- Long waiting time for services.
- The limited service hours
- In hospitable environments for personnel care
- The lack of sustained follow up of patients receiving treatment
- The lack of access to supportive services

- The lack of systematic data on the costs and effectiveness of different strategies for delivery of TB service.

3. Health care provider/ care giver factors

- Inadequate knowledge/ inappropriate type or level of training such as physicians delay in diagnosis or make critical errors in diagnosis and treatment for example; premature cessation of all drugs in the regimen resulting in continued infectiousness and progression of disease.
- The prescription of inappropriate types or combinations of anti-TB drugs, resulting in treatment failure and the development of drug resistance.
- A punitive or negative attitude toward TB care
- Difference with patients concerning, for example, language, race or gender
- Burn-out

4. Other factor is Drug susceptibility.

A study in urban Lusaka, Zambia found that the delay was associated with older age, severe underlying illness, poor perception of the health services, distance from the clinic and prior attendance at a private clinic (Godfrey-Faussett et al., 2002).

2.4.4 Stigma of TB and HIV/AIDS

Cultural factors may affect the use of services and the outcome of treatment. For many cultures, there is a stigma associated with tuberculosis that lead to ostracism of the patient by others in the community.

The study in Chiang Rai (Ngamvithayapong, Winkvist, & Diwan, 2000). which has a high HIV/AIDS prevalence northernmost province of Thailand revealed that TB remained a stigmatized disease although less than AIDS, the community stigmatized TB patients because of it being contagious and easily transmitted through

exhalations, foods and drinks and closeness to TB patients. Lastly, patients who suspected that they had AIDS and feared AIDS detection resulted delay in a seeking care and in non-adherence to TB treatment in some patients.

2.5 Community Participation

2.5.1 What is Community Participation?

Community participation is the same term as community involvement, community action and social control which be used to reflect people's role in health development (WHO, 1993a). Concept of community participation, developed from the concept of community development, which enables people to help themselves by practicing not only being passive recipients of development. This gives the community the sense of ownership, obligation and responsibility (Senaratana et al., 2000).

Community Participation is a process based on dialogue with, and empowerment of, a community to identify its problems and decide how to solve them (UNICEF, 2002). Community participation shares several characteristics and the community action varies from one place to another. Active community participation is the key to building an empowered community since the power and responsibility are decentralized. Participation is a soul of an empowered community (Reid, 2000)

The term "community participation", as defined in the report of the International Conference on Primary Health Care, held in Alma-Ata in 1978, refers to the process by which individuals and families assume responsibility for their own health and welfare as well as for those of the community, and develop the capacity to contribute to their own development and of the community. This enables them to

become agents of the development instead of remaining passive beneficiaries of development aid (WHO, 1993a).

Therefore, community participation is a community-centred approach which is bringing the community voice into the research to focus on enhancing participants' capacities to assess, prioritize, plan, create, organize and initiate in the research study. Community participation in health care is a process of community development by which individuals, organizations, institutions and societies come together in relation to generating and sharing information and analysis, and active to perform specific functions to solve their problems as they set and achieve objectives. This means that ways for the community to participate fully at every stage of the research process.

2.5.2 Levels of participation

The level of participation may range from low to maximum participation. The low participation means by manipulation to complete power to make decision. At the maximum level, there was a sharing of power and control, with greater community input into decision-making. Authentic participation will be an active and dynamic process when communication is no longer one way, but becomes dialogical (i.e., two-way communication). At this level, the development and mobilization of people's organizations occurs, and self-help efforts can be stimulated. It was noted that, although participation is indeed a feature of many development efforts, it is rare to see the attainment of that form of participation that is characterized by full partnership and equality (Baldwin & Cervinskas, 1993).

The real objective of participation is to enable people to participate in planning or conducting programmes. Involuntary participation or non-participation is

to enable those in power to educate or cure the participants. The participation is related with power: power relationship between the government and citizen. Powerless citizen can not express their decision-making. Participation is an underlying democratic vision and the change in power relations are perhaps the most important criteria of success.

However, how people will participate in rural development depends on many factors and is shown as an algebraic equation below (Bryant and White cited in Prachyapruet, 1998);

$$P = (B \times Pr) - C$$

P = Participation

B = Benefit hoped to gain

Pr = Probability that they will actually be achieved.

C = Cost of working for them (participation)

2.5.3 Who Should Participate?

Communities usually have many kinds of leaders and associations with which to work. Community group members are lay leaders, political office holders, private citizens and representative of services and social organizations, health organizations, private companies, religious groups, schools (teachers, students) and other groups. Researchers have to work with the person or the leader in community who are respected by others and can influence others such as religious leaders, women leaders, school leaders. Those opinion leaders can identify the problems and the resources of the community, gather people for meetings, share information with others, conduct meetings, control conflicting ideas and activities, and act as initiators.

Together with community residents and their organizations, identify the root causes of health and disease problem and develop a plan to promote community health.

Furthermore, former TB patients or TB patients should be involved in the community working group because they will motivate others to seek diagnosis and treatment but also to reduce stigma from the community. The TB clubs which were formed by groups of TB patients in Ethiopia shows what can be achieved - even in remote rural areas with limited resources and using a long course of treatment - if TB patients are at the centre of TB control efforts and if there is effective community involvement (Getahun & Maher, 2000).

2.5.4 Strengths / Benefits of Community Participation

Scientists often work in geographical areas about which they know little and design studies based on assumptions that may be incorrect. Rapid assessments can help in the definition and focusing of research objectives. The assessment may also lead to a redefinition of the working hypothesis or to the generation of a new hypothesis as well as lead to the identification of problem as perceived by the community. In addition, participatory methodologies may help in research design for example: how to formulate more detailed questions for investigation; to decide upon variables to be included in a questionnaire, to develop consensus among members of multidisciplinary team on just what you need to know and to ask in a study; to uncover indigenous knowledge and practices about which researchers were not aware, to help the researchers gain a better understanding of topics such as beliefs and taboo; to seek out people's attitudes, beliefs, terminology, taxonomy, etc., participatory methods can lead to enhanced validity of information collected in studies and to the more accurate interpretation on findings Participatory methodologies can be used in

the establishment of baseline information in a project and can be used in project monitoring and evaluation (Baldwin & Cervinskas, 1993).

Furthermore, the project can become sustainable because when it is performed by local community representatives, the effects are far different from the project that is run by government officers, which when they were finished with the study nobody continues work on it (Senaratana et al, 2000).

2.5.5 Weaknesses / Barrier of Participation

The various disadvantages of the participatory method are as follows:

This approach requires active, well trained facilitators. The facilitator must have different skills and ability to confront and facilitate difficult issues and resolve conflict using a problem-solving approach. He or she might needs to be tolerant of different viewpoints, showing fairness and impartiality (Ewels&Simneet, 1996). To motivate all stakeholders to forge closer working relationships, it is necessary for partnerships to pay close attention to a variety of structural and operational dimension, the lack of which could prove to be major constraints to effective partnership functioning. The lessons learned from South African cases are that wide representation, commitment and a sense of ownership, sound leadership skills, regular and effective communication, reliable member expertise and capabilities and attention to power issues are crucial elements in the partnership equation (el Ansari & Phillips, 2001).

Although, the partners outside the community can provide valuable additional technical assistance and consultation the question on how to balance the outside assistance and community autonomy including sustainability are another challenge. Another concern is empowering the community, enabling it to take care of

its own health needs, is a long-term learning process. Results might not be achieved overnight (WHO, 1993a).

The following are some common problems in primary health care and participation which the researcher should be aware (Sharples, 1993).

1) Even though project interventions are acceptable to individual community residents, they do not want to join in activities that would support those interventions, since they perceive that they will enjoy the same benefits whether or not they themselves participate.
2) Patients tend to bypass peripheral health units and seek care directly at the hospital outpatient department.
3) Heavy case loads limit the opportunities for education in the health center.
4) Ineffective and infrequent supervision of Community Health Workers (CHW).
5) Too many tasks are assigned to CHW's. Tasks do not have a clear priority.

Other difficulties are the difficulty of building genuine investment and participation; and the time involved in working with large groups, reaching consensus and scheduling meetings. The measurement in the context of the participatory model is more difficult to conceptualize than in the context of the medical model. A consequence and because the participatory model is of recent origin-there is a shortage of facts and knowledge.

As mentioned above, there are several barriers to successful consumer / community participation. In addressing these barriers to participation, Lindberg (1999 cited in Johnson & McAdam, 2001) suggests the following five strategies:

1) Clarity of purpose and the development process and expected outcomes of the project or activity to partnership.
2) Consumers being involved from the beginning to ensure clarity of purpose and sharing a sense of ownership having contributed to the planning from the outset.
3) Ground rules for group functioning – consumers participating in the functioning of the organisation should be given copies of organisational documents (especially in regard to confidentiality and communication processes).
4) Group management skills
5) Team building – sharing and being respectful of diverse opinions, open communication, collaboration and trust.

2.5.6 Key Factors Associated with Success of Community Participation

The success of community participation by mobilization of community groups varies slightly from site to site depending on the following influencing factors;

- It is better to work through existing community organizations than to create new ones (Hadley & Maher, 2000; Sharma, 2002). To cooperate, coordinate and linkage with both existing NGOs and Government resources in the community is a necessary for service coverage and appropriateness (Senaratana et al., 2000).
- The public health interventions in different kinds of communities have failed because of inappropriate cultural assumptions and culturally insensitive study designs (Vega, 1992).

- Developing an organizational innovation that was designed to direct time and expertise toward building partnerships with people in their communities, to pay attention to what people themselves think is of importance for improving health, and to strengthen people's ability to fully participate in a community health improvement process (Westbrook & Schultz., 2000).
- The success of the project depends on the existing capacity of the community. The important components of these are comprised of the strength of leader who must be devoted, be interested and support the project. Peer leaders also must be respected in the community and be able to influence the community's thinking decision, implementation and evaluation (Senaratana et al., 2000).
- A community becomes mobilized when a particular group of people becomes aware of shared concerns or common needs, and decides together to take action in order to create shared benefits (UNAIDS, 1999).
- The sustainability of the project in the community is based on both the strength o r capacity of the working committee network to develop the plan and ability to work together.
- Community health workers can play an important role, provided that they receive adequate support, motivation and incentives (Hadley & Maher, 2000).
- In general, successful community approaches have been the result of:
  1) Good collaboration between general health services, the TB control programme and the community
  2) Good education of the TB patient and his or her family
  3) Good training for community supporters as well as health workers

4) Good systems of supervision of community supporters by TB programme staff

- However, It is emphasized that sustainable change and development at the village level can only occur when the beneficiaries are involved. The use of the village leader training programs and village research committees are means to enhance local participation in identifying and solving community problems (Baldwin & Cervinskas, 1993).
- Most participatory approaches in health share some common core principles as follow (el Ansari & Phillips, 2001).
  1) Do not be overwhelmed by the tasks which were required from community because everyone has their own obligation.
  2) Respect for the individual as an adult with experience, ideas and concerns of his/her own.

2.5.7 What Kind of Support does the Community Need?

Although the trend for decentralization in health management with delegation of responsibility and authority from center to regions and districts is already widespread in most South East Asia Region countries the delegation of money and other kind of support from government is also necessary and it will vary from one community to another (WHO, 1993a). Maximize use of community resources while identifying and using additional external resources as needed (UNAIDS, 1999). Although it is difficult to control outside resources which is uncertain for funding, the support from the government it is still necessary for some poor communities to get support in kind or in cash from their government. The existing resource in some communities might not be enough to mobilize. The community organizations will

need new resources, technical assistance, and training (Freudenberg, 1995). The public health agencies get the direct support from government to provide health care for community and people, therefore, the government should provide some kind of the support to the community for health development. Otherwise, the government's role will be viewed as the corporate control that only pushes the burden back to community only.

Incentives are often used as a means of enlisting cooperation and participation in a study. This is especially true in settings where the research timeframes to work in a community are extremely limited and incentives are seen as “consolation” for information extracted from people. Some individuals would not partake in research otherwise, and often a community is used as a laboratory, suggesting that compensation should be given (Baldwin & Cervinskas, 1993).

2.5.8 How Can You Know When You Achieved It?

Since the method of participatory research are mainly qualitative and the evaluation concentrates to describe the process and development of the programme as well as the outcome measures.

The evaluation of community involvement in health development is still at the trial-and error stage and more specific research and investigation will be needed in order to improve the basis for the evaluation of community participation in health development. However, Oakley (1989) provided the following framework as a tentative basis for an approach to the evaluation of community participation in health care development.

Table 2.1: An approach to the evaluation of Community Participation in Health Development (Oakley, 1989)

Aspect of community participation in health development (CPH)	Possible indicators
Input	• Interpretation of CPH; • availability, type and performance of support mechanisms for CPH; • level of resources available.
Process	• training procedures for CPH • local administrative procedures for CPH.
Output	• evaluation of procedures and mechanisms to facilitate CPH; • multiplier effect; • institutionalization of the CPH process
Effect	• increasing involvement of the community in health planning; • level of involvement in, for example, control over resources and choice of technology; • increasing awareness of the cause of poor health; • community initiatives to tackle poor health.
Impact	• increasing accessibility of health services; • gradual establishment of a basis for future community involvement in health care**.**

2.5.9 Community Participation: The Experience of Thailand

In the past, medical service was the emphasis of health development. Services began to shift from providing for the sick to risk groups in the population. Since the Fourth Development Plan, the focus further shifted toward the community, i.e. the creation of health volunteers and their role in primary health care. (Nondasuta, 2000) In Thailand, most of the community health services are provided by government public health centers and community hospitals. Many of health service

activities are more defensive than offensive. After Thailand had experience with the new constitution which was developed in 1997, the government system in general and the health care system has been reformed. The influence of the new constitution including the patient's right declaration can raise awareness about human rights and people's participation right from government. The government policy and health care sector are recognizing and involved multi-disciplinary terms .However, in practicing and reality mostly local community participation appeared to be peripheral on a ladder of participation. The obvious evidence can see the community health volunteer will proceed with certain tasks as health care professional delegate or assign to them.

There is increasing evidence that the health sectors need communities and families to participate and carry out the health care for chronic patients. The effect of the AIDS epidemic is a good example for this need. In the past home-based care provision for the case of patients with chronic illness has seldom been mentioned and has not been prioritized as part of health care. Not until the second phase of AIDS epidemic in 1989-1992 was the stage of fundamental development of the community and home-based care for PLWHA. In Chiang Mai, Upper north province of Thailand, the community participation strategy was used successfully in a prevention and care for HIV/AIDS cases. The aims of community participation project include: to enhance the knowledge and good attitude toward AIDS and HIV/AIDS cases and to develop a potential of key leaders to conduct HIV/AIDS prevention and care activities in the village and HIV/AIDS case and to bring about positive change in acceptance of and support for HIV/AIDS cases (Senaratana et al., 2000).

Another successful example of community participation is the study in Lampoon province on community-based participation and self-sufficiency in

managing and providing HIV/AIDS health care was developed and can serve as a self-help village module in rural communities (Upsorntanasombat, 1995). as table below;

Table 2.2: Thai experiences in community participation

Study setting	Objective	Result
Tha Wangtan subdistrict, Srapee district, Chiang Mai province , Upper north (Senaratana, et al., 2000)	• To enhance knowledge and good attitude toward AIDS and HIV/AIDS cases among community people via key leaders. • To develop a potential of key leaders in the campaign regarding prevention of HIV infection in the community. • To create a community network and provide counseling to HIV/AIDS cases and their families. • To promote community acceptance of and support for HIV/AIDS cases .	• The villagers have more knowledge in AIDS and more concern and active in health care, information exchange, local interactions, and has a better attitude toward HIV/AIDS cases. • The key leaders are able to conduct HIV/AIDS preventive and care activities in the village. • The HIV/AIDS cases have received more health care and social support.
Dong Luang village (rural community), Pasang district, Lampoon province, Upper north (Upsorntanasombat, 1995)	• To develop community-based participation and self-sufficiency in managing and providing HIV/AIDS health care.	• This study can serve as a self-help village model for both government and non-government organizations to establish HIV/AIDS healthcare programs in other rural communities.

2.5.10 What Can the Community Do for TB Control Programme?

There are various forms of community participation in TB control. However, the study of Maher et al. (1999) showed that most of community participation studies present the role of community health care volunteer as acting as a treatment supervisor.

In Ethiopia, TB is often highly stigmatized. Getahun and Maher (2000) found that TB control can be achieved even in remote rural areas with limited resources and using a long course of treatment - if TB patients are at the centre of TB control efforts and if there is effective community involvement. The TB clubs which were formed by groups of TB patients with help from community elders, religious leaders, community health agents and local health workers. The TB clubs identified people in the community with suspected TB, encouraged them to seek diagnosis and treatment, helped to promote adherence to treatment and to trace defaulters. Using educational materials provided by the Ministry of Health, TB club members have also helped to educate the community about tuberculosis, in collaboration with health workers and community health agents. TB clubs have helped to increase community awareness of the symptoms of TB and the need for treatment, Attendance at TB clinics has also improved significantly and treatment success rates are higher than in other parts of the country.

Etkind (in Rom & Garay, 1996) noted that the community has a role to support the patients to complete the treatment including other social service assistance and incentives to TB patients in the complete treatment. However, there is no blueprint for an effective TB control programmed through community participation. There is still room for many different approaches, in many diverse settings, and involving many different types of partners. The strategies should be adapted to different circumstances.

However, components of TB care rendered in community-based projects are not the same in all projects. The ones which are common in many projects are: i) DOT, ii) default retrieval and iii) identification of symptomatic. The other components

considered are i) IEC activity relating to tuberculosis, ii) pre-treatment education of patients and their family members, and iii) sputum microscopy. (Sharma, 2002)

2.6 Slum Community

2.6.1 What is a Slum?

The Bangkok Metropolis Administrative (BMA) has defined communities into 5 categories: 1) slum community, 2) suburban community, 3) real estate community, 4) urban community, and 5) housing community. In the year 2000, there were 1,596communities in Bangkok. The National Housing Authority (NHA) define "slum" as a densely packed housing unit in a state of disrepair, with overcrowding of the units and with a dangerous environment. In 1960, the "slum" was code as the area of evil path, area of rot, area of catastrophe or calamity .In 1982, the "congested community" was used instead of "slum" by NHA (Rabibhadana, 1999). The BMA defined congested community that has more than 15 households per Rai. There are 52, 092 households with 138,803 population in Klong Toei district (Klong Toei District, 2000).

Prateep Ungsongtham Hata, Duang Prateep Foundation founder and General Secretary, expressed that "*In my senses the meaning of slum is an living area of unskilled laborers without management system both physical and social aspect . Slum is source of cheap price workers. The way of life is untidy, poor environmental conditions. Nobody pays attention to develop these people, except election campaing season*." (Kenbe, 2000)

2.6.2 Background of Klong Toei Slum Community

Klong Toei was appointed to be a district on November 9th, 1989. It has an area of 12,316 Km^2 (8,010 Rai). Klong Toei District is, the inner district, where it is the site of Bangkok Sea port. It is the center of waterway transportation communicated to the foreign countries. It is the economy trading locations along the Sukhumvit road line which is in the north of Klong Toei. One part of social state is a business society and the other part is a big slum. There are three Buddhish temples inside the community (Klong Toey District, 2000). The Royal Thai government expropriated land around 2,259 Rai to develop Klong Toei district to be the port during 1937-1939. After that, Thai people outside Bangkok migrated to work in the port. These included the slum residents from Saphan Lueng and Suan Mali who lived in Bangkok and migrated to this area because of the fire which destroyed their houses. The community was first established in 1952 as dwelling place for ports workers and other laborers. In 1970, Thai government received a 250 Million Bath loan from the World Bank to expand the port. Rapidly increasing population migrated to work and live in Klong Toei. The Klong Toei community is more than 50 years old and is acknowledged as the biggest slum community In Bangkok and Thailand (Rabibhadana, 1999). Although, the slum's surroundings are neglected and untidy, the community residents are still gathering as groups and respect the senior people (Pornchokchai cited in Rabibhadana, 1999) The average household in slum Klong Toei is 5.97 persons/ household and 20.84 household / Rai, both of which show that this community is congested or a slum, by official definition (Klong Toei District, 2000).

2.6.3 Problems in Klong Toei Slum Community

Overall social problems of Klong Toei residents are as follows; 1) unemployment, 2)narcotic addiction, 3) children and youth problems (narcotic addiction, family problems, poverty, education.), and 4) environmental problems (garbage, rubbish, un-repaired walkway , no light on footpath) (Klong Toei District, 2000).

Moreover, there are still other problems that slum people face include:

1. A constant threat of eviction from land reclaimed for development. Dwelling are makeshift and unstable because most residents have no rights to the land they occupy.

2. Cycles of poverty, broken home, HIV/AIDS, TB, criminal or illegal activity, gambling and alcohol dependence, which continue in the community. Poverty is a multidimensional phenomenon. It is, not only from the income perspective, encompassing inability to satisfy basic needs, lack of control over resources, lack of education and skills, poor health, malnutrition, lack of shelter, poor access to water and sanitation, vulnerability to shocks, lack of political freedom and voice. Human Poverty Indices are based on personal security and environment, health, housing, and knowledge/ literacy and participation in the activities of the community. Poverty probably results in poor nutrition, which is likely to render the immune system more vulnerable to invading organisms such as *Mycobacterium tuberculosis. Poverty resulting in overcrowded living conditions and poor sanitation is likely to increase the risk of disease transmission.*

3. Population density. Urban areas have a much higher population density than do rural area. In a warm climate, outdoor social activities are much more

common than in a colder climate (Rieder, 1999). A susceptible person will be exposed to an infectious tuberculosis patient increases with population density (Rieder, 1999) particularly in a slum community. The most intense exposure is likely to occur among persons who share the same household or who spend long periods of time in the same room with an infectious source case (Rieder, 1999).

Aside from social problem, some problems in the community occurred from the community committee administration which depend on (Klong Toei District, 2000);

1. Background and knowledge of them
2. Level of education
3. Goal or ideal in working
4. Benefit that related in the community.
5. Gang such as local political gang,.
6. Acceptance of community residents

2.6.4 Agencies Working in Klong Toei Slum Community

There are various groups and organizations working in slum Klong Toei. They are divided into 3 type of characteristic as below (Klong Toei District, 2001).

1. Main organizations which have been arranged by community residents those are; community committee who are elected every 2 years by NHA and BMA; informal youth group in the community, cooperative society (presently available only in lock 7-8-9 and 10-11-12), slum Klong Toei federation (founded in 1982), voluntary Anti-amphetamine drug association (founded in 1993) and 70 Rai relief emergency unit

2. Public service agencies comprise of 20 Pre-school centers, 6 primary schools, 2 Charity clinics, 1 Mosque (lock 1), 1 Play ground, 1 sport ground, Klong Toei service center, Village community development school (BMA), Vocational school, BMA career training school, Rehabilitation center for promotion free from drug abuse, 4 libralies, 3 Temple (Wat Klong Toei nok, Wat sapan, Wat Klong Toei Nai), and 1 Church.

3. Non Governmental Organizational are Duang Prateep Foundation (DPF), Mercy center, Reum-namjai foundation, Japanese volunteer, J.S.R.C. organization, Santisuk foundation, Bannchewitmai (House of new life), Foundation for slum child care, and Primary development institute.

These organizations work independently. DPF has been is a community – based organization, which was established in Klong Toei slum in order to improve the standard of living and health of people in the community. DPF has been in Klong Toei working for more over 20 years. With long duration and experiences working with the Klong Toei residents, DPF has been involved with the broader issues from the study project through 22 projects, including, of course, the AIDS project Duang Prateep Foundation. (1997).

There are various health care facility in Klong Toei district and nearby Klong Toei community which community residents use those services as follows;

Table 2.3: Health Care facility in Klong Toei district and nearby

Government facilities	Charity/NGO	Private hospital
• Police hospital • Lerdsin hospital • Chareonkrung Pracharak hospital	• Chulalongkorn Hospital (Thai Red Cross society)	• Carmillian • Sent Louis • Mahasak Gauynamthai
• 3 BMA Health center (#10th , #21st,# 41st)	• 1 HIV/AIDS Hospice (Mercy center)	

There are 3 BMA Health Centers which service for Klong Toei community residents. Those health center are (Department of Health, BMA, 2001);

1. BMA Health Center 10th which is located at 722 Sukhumwit Soi 30, sub-district Klongtun, Klong Toei district.
2. BMA Health Center 21st which is located at Wad Thadthong, sub-district North Prakanong, Sukumwit Road, Wattana district.
3. BMA Health Center 41st which is located at 139 Ardnarong Road, sub-district Klong Toei, Klong Toei district. This center is the closest Klong Toei community.

Other organizations from outside are continuously providing programmes within slum Klong Toei, these include the College of Public Health, Chulalongkorn University.

2.6.5 Efficiency of NGOs

The role and efficiency of NGOs working in Klong Toei District are widely acceptable because of their faster response and access to the community than government agencies. They do not only give suggestion but also implement with community. Meanwhile, the government agencies' roles are only as a coordinating

body. In addition, NGOs play an important role in administrative planning for community committee in every process from the first step until completion (Klong Toei District, 2000). However, the development in Klong Toei need support from both government and non-government organizations. The evident success of social and education development in Klong Toei in the past results from the major involvement of leaders and the residents of Klong Toei community (Duang Prateep Foundation, 1997).

2.7 Obstacle of Previous Community Participation in Klong Slum Community

Although, there are established various kinds of civil society groups working for the benefit of the community, the process of those groups are still at a low level. There are the following seven civic society groups; civil society for Rama IV, environmental conservative civil society, Klong Toei sport civil society, anti-narcotic volunteer civil society, Klong Toei elderly civil society, anti-fire in Klong Toei community and civil society for Sukhumvit road. (Kong Toey District, 2000)

In addition, the projects of community based organizations which are related with social development and participatory promotion of population are still lacking coordination with related agencies and cannot develop the project as it should be. This is because of the workload of community residents, people have no opportunity for participation and exchange ideas, moreover, most of the leader will work if they get the benefit (Klong Toei District, 2000).

It should be noted that, DPF had twice conducted participatory training on TB disease during January to February 2002. The total of 90 participants were the housewife volunteer group in Klong Toei community. Mrs. Nittaya Promporcheunboon,

the AIDS Project Manager pointed that "*We do not have plan to follow up and evaluate the training and participants. Thus, it is not sustainable and no evidence in term of action or any changing . We need the technical assistance from an academic person to input for planning, management process and monitoring and evaluation"* (Prompochuenboon, 2003)

CHAPTER III

OBJECTIVES, RESEARCH QUESTIONS, OPERATIONAL DEFINITIONS AND CONCEPTUAL FRAMEWORK

This chapter is comprised of hypothesis, objectives, research questions and operational definitions.

Hypothesis

1. Community participation is feasible to participate in TB control programme planning formulation for Klong Toei community.
2. Socio-economic factors, social support, accessibility to TB service, and individual factors are associated with TB control problems.

3.1 Objectives of the Study

3.1.1 General Objective

The general objective of this project is to provide recommendations that are developed by community partnership to the responsible local government authorities and CBO including community partnership related to information regarding how best to improve the TB control program in the Klong Toei slum community.

3.1.2 Specific Objectives

1. To develop a community partnership that comprises of representatives from various groups in the community (community leaders, youth groups, house

wives groups, former TB patients, health service providers, NGOs) to participate in this study.

2. To describe the nature and extent of existing health services (both governmental and non-governmental organizations) for community residents and TB patients

3. To describe health seeking behaviour of community residents and TB patients.

4. To explorer general TB perception of community residents and relationship of socio-economic factors with those perceptions.

5. To determine TB service needs and the utilization of TB services, in terms of geographic accessibility, availability, affordability and acceptability, of the community residents and TB patients by socio-economic factors.

6. To develop an action plan to improve the effectiveness of a TB control program, through community participation.

3.2 Research Questions

The research questions for this study, are as follows:

1. What is the strategy in the development of community partnerships, to participate in TB control programme formulation?

2. What is the nature and extent of existing health services (GO, NGO, including community organizations) for community residents and TB patients?

3. What are the health seeking behavior of the community residents and TB patients?

4. What are the TB perception of the community residents and TB patients and the relationship of socio-economic factors with those perceptions?

5. What are the determinants of TB service needs and the utilization of TB service in terms of geographic accessibility, availability, affordability and acceptability of TB health services, of community residents and TB patients?

6. What strategy combines quantitative and qualitative information to develop an intervention program to improve TB control in the Klong Toei community?

3.3 Operational Definitions

The following terms are defined for the purpose of this study.

TB control means TB prevention and care services, these are BCG vaccination, TB education, components of DOTS strategy (diagnosis based on sputum smear microscopy and case-finding among symptomatic patients, presenting to health services; standardized short-course chemotherapy, including directly observed therapy; the provision of a regular supply of essential anti-tuberculosis medications), home visits, TB/HIV/AIDS counseling, surveillance in vulnerable and risk groups, nutrition aid and social support.

TB control program formulation means a TB action plan which comprises of activities related with TB control (whether prevention or care), which does not currently exist in the Klong Toei community.

Urban slum community refers to Klong Toei slum community.

Community residents or residents, are defined as men or women who have a Thai nationality, 18 years old and more, living in the Klong Toei community, for at least 1 year.

Community partnership means a group of voluntary community representatives, from individual or various groups; community leaders, youth groups, housewife groups, Village Health Volunteer, former TB patients, NGO staff, and health services providers, coming together to form a new local group to participate in this research.

Community participation means community partnership, participating in analysis problems, identify gaps, and needs in the area of Tuberculosis control programs for the community residents through sharing and contributing their knowledge, experiences, opinions, ideas, expertise, time, decision making, and resources in meeting, training, workshops, data collection preparation, data collection implementation, which leads to a TB action plan in the Klong Toei community.

Perception is the way the community residents and TB patients interpret or give meaning regarding the severity, risk, and prevention of TB disease and perception toward TB services, regarding what it is like.

Knowledge refers to the understanding of facts about TB disease such as what TB is, modes of transmission, the differences between TB infection and disease, signs and symptoms, treatment.

Attitude means the feeling and belief of the respondents toward TB disease and TB patients.

Practice refers to productive–operations in order to prevent TB transmission e.g. wear hygienic mask

Services need means the requirement of community residents and TB patients related to TB services in the Klong Toei community.

Accessibility to TB services refers to four dimensions (WHO, 1996), as follows:

a) Geographic accessibility. This dimension includes the distance from home to the health facilities (travel time from home to health facilities), the means of transportation, that people use when visiting the health facilities, and the average number of operating hours per day of the health facility.

b) Availability means the quantity of need /demand relative to the quantity of health services.

c) Affordability is financial accessibility. This also means the resources to purchase or pay for health care relative to the price/cost of the care.

d) Acceptability means the characteristics of services and user attitudes, satisfaction, perceptions or expectations of services, including socio-cultural concerns. It also refers to privacy, room for consultation or physical examination.

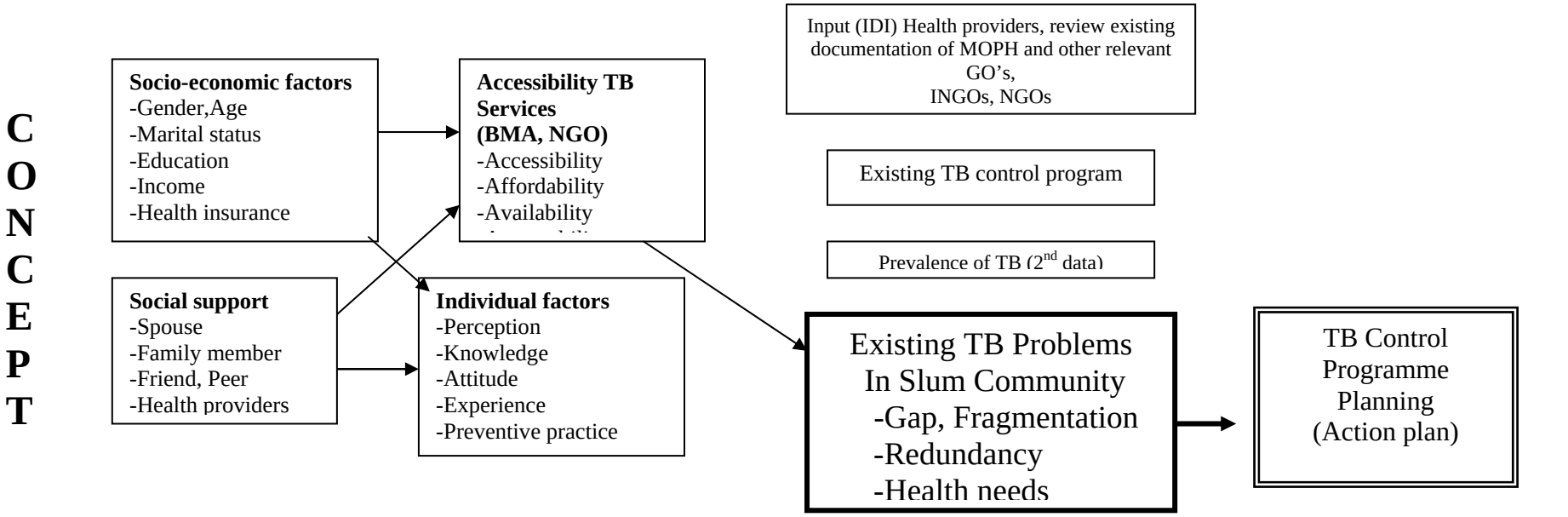
Health Services Health services include curative, preventive and promotive services for community residents and TB patients. In this study, the researcher focuses on the BMA (government) health facility that is located in the slum community. There are some private clinics located in this community, as well. However, it was difficult to encourage them to participate as a partner in this study.

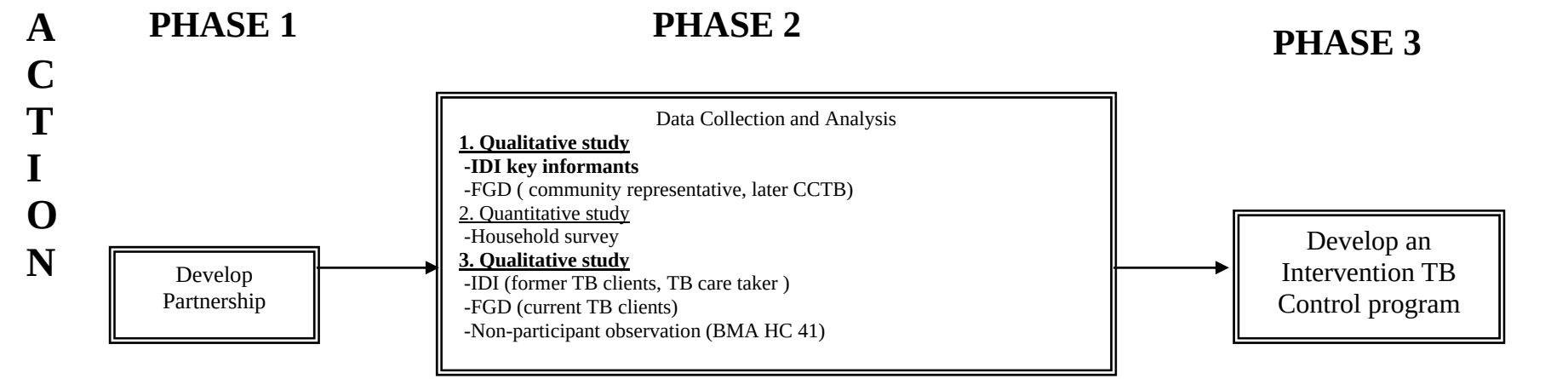
TB patients refer to current TB clients who enroll for TB treatment at BMA health facility 41, at the study time of this research**.**

Former TB patients are TB clients who are success fully cured by TB treatment from BMA health center 41.

3.4 Conceptual Framework

The Concept framework of this study is presented in figure 3.1. It was, applied from the PREDEDE model, a health-planning mode (Green & Ottoson, 1994). Due to shortage of time and budget, the current study only focused on developing and intervention to improve TB control program


CONCEPT
Socio-economic factors
-Gender,Age
-Marital status
-Education
-Income
-Health insurance
Social support
-Spouse
-Family member
-Friend, Peer
-Health providers
Accessibility TB Services (BMA, NGO)
-Accessibility
-Affordability
-Availability
Individual factors
-Perception
-Knowledge
-Attitude
-Experience
-Preventive practice
Input (IDI) Health providers, review existing documentation of MOPH and other relevant GO's, INGOs, NGOs
Existing TB control program
Prevalence of TB (2nd data)
Existing TB Problems In Slum Community
-Gap, Fragmentation
-Redundancy
-Health needs
TB Control Programme Planning (Action plan)


ACTION
PHASE 1
PHASE 2
PHASE 3
Develop Partnership
Data Collection and Analysis
1. Qualitative study
-IDI key informants
-FGD (community representative, later CCTB)
2. Quantitative study
-Household survey
3. Qualitative study
-IDI (former TB clients, TB care taker)
-FGD (current TB clients)
-Non-participant observation (BMA HC 41)
Develop an Intervention TB Control program

CHAPTER IV

METHODOLOGY

This chapter gives details of the study methodology, which comprises of research design, study community, study population, sampling, and a study approach that involves community organizations. It also includes measurement, data analysis, limitations of the study and ethical considerations.

4.1 RESEARCH DESIGN

This study is a descriptive study that adopts the participatory approach as a means or strategy in study process. The study was divided into three phases; PHASE I. was partnership forming, PHASE II. was data collection and PHASE III. was a TB control plan development, for studying the community.

PHASE I. This phase aimed to develop the partnership. The formative study was undertaken by reviewing the literature form both published information sources and available unpublished information. The level of existing information ranged from a community level, through to a national level and international level. A local community organization was identified as entry the point for community engagement. Interested prime movers were invited to participate as a partnership. Workshops and training were carried out for strengthening capacity to the partnership. The preliminary qualitative study was also conducted in this phase. The results from qualitative data collection both IDI and FGDs from various respondents, were analyzed and was used to develop the quantitative study tool (questionnaire for household survey) in PHASE II.

PHASE II. This phase was a descriptive study that employed a combination of quantitative study, and qualitative study for data collection and management. It aimed to explain the association among TB perception, health seeking behavior, existing TB services, TB prevention and treatment, including the consequences of target populations (community residents, former TB patients, TB patients, TB care takers.)

The quantitative research technique used to quantify the size, distribution, and association of certain variables, in a study population from the community residents. The interview questions had 4 parts: i) socio-economic data and health care behavior, ii) TB perception on risk, severity, preventive practice. Perception on TB treatment policy, iii) community's need in term of TB services. iv) community participation in TB activities. The partnerships who volunteered to be a TB working group (TBWG) participated in this household survey.

The usefulness of different data collection methods were not only to explain the mutually related variables, but also for cross-checking data consistency and data validity including obtaining sufficient additional in depth information from TB patients' perspectives. Thus, the TB care takers/ guardians and TB patients declared cured and were not exposed to the study of the first phase, were purposively selected on a voluntary basis for an IDI (In-depth interview). TB patients on treatment at the study time were also purposively recruited for FGD (Focus group discussions). Non-participant observations included client-provider interactions, the process of providing services, privacy, waiting time, and overall characteristics of interaction among service providers and the clients were conducted at the TB clinic of the BMA health

center. This observation provided, more additional and accurate information, from both health providers and TB patients.

The data collection method is summarized as table 4.1.

Table 4.1: data collection method

Study Approach	Sample size	Research method
1. Qualitative study (preliminary study in PHASE I.)	Former-TB patients	IDI
	Key Informants	
	• Government officers (the Director, a TB physician, and a TB nurse of BMA health center 41	IDI
	• 1 NGO staff (Manager, AIDS project, DPF)	ID
	• The representative of community (community leaders, housewife groups, youth group, community health volunteer)	5 FGD
2. Quantitative (Descriptive study) (PHASE II.)	Community residents	Structured interview questionnaire
3. Qualitative study (Explanatory study) (PHASE II.)	TB patients enrolled TB treatment at BMA	9 FGD
	• Heath staff of Health center 41	
	• Former TB patients	IDI
	• TB care takers	IDI

PHASE III developed a TB control plan for study community. The partnerships participated in meetings to prepare and participated in a final workshop. The final workshop was arranged for three days outside Bangkok to reward them after they worked hard. The TB action plan was completed as the study results of the second phase.

4.2 Study Community and Study Population

4.2.1 Study Community

The congested slum Community in Klong Toei District was purposively selected for this study. This community is located in the area of the National Port Authority of Thailand, Klong Toei District. It was first established 1952 as a dwelling place for the laborers of the National Port Authority of Thailand. It is the largest slum community in Bangkok. The area is around 1,040.3 Rai (around 1.6 square km), encompassing 40 different slum communities with a population of 117,790. There are 18,786 households with around 42,875 families (Klong Toei District 2000). The average population in the slum Klong Toei is 5.97 person / household and 20.84 household / Rai which is reflected as congested or a slum community (Klong Toei District, 2000). The Klong Toei community comprises of 40 sub-communities. This study recruited 14 sub-communities as the representatives from each sub-community and community leaders participate as partnership in this study voluntarily and these sub-communities were characteristic of the 40 sub-communities. Currently, the Klong Toei community is more than 50 years old and is acknowledge as the biggest slum community In Bangkok and in Thailand (Rabibhadana, 1999). Within the surroundings of the unclean and untidy slum community, the community residents still gather as a group and still respect the senior people (Pornchokchai cited in Rabibhadana, 1999). In this community, there are various community organizations, including government and non- government sectors and informal community organizations, that work for community development and community health. The DPF is a Community-Based Organization, which is located in the central part of the community. It works both for community development and community health. For

community health, the Health Center 41 was assigned by the Department of Health, Bangkok Metropolitan Administration, to provide health services for the people in this district. This health facility is located on the other side of the main road across from the largest part of the community.

4.2.2 Study Population

Three main groups of the study population were recruited for this study, with the intent of getting the most complete information on the TB problem, regarding prevention and care in the community also to involve them in development of the TB control programme. The first group of the study population, was recruited as key informants. They were the government health officers; the Director of BMA health center 41, a TB physician, a TB nurse, a former TB patient, a TB care take/ a guardian, a representative of the community leaders, a representative of housewife groups, a representative of youth groups, and NGO or CBO. staff. These groups were also invited to participate as partnerships or Community Committees on TB. The second group of study population was community residents who were 18 years or more and have lived in the Klong Toei slum community for at least 1 year. There were 38,099 community residents living in 14 selected sub-communities (Klong Toei District 2000) and 430 people were recruited to respond to the semi-structured interview questionnaires. The third group of the study population were former TB patients declared cured treatment, TB care takers/guardians and TB patients on treatment.

4.3 Key Informants

The key informants were representatives of community leaders, of the housewife groups, of health care providers at BMA Health Center, of NGO officers, of youth groups, and of the private sector, which consisted of Clinics, The key elements of the research questions asked to each key informant was their opinion regarding the TB situation and problems regarding prevention and care, their roles/responsibility, towards TB control, whether existing services that were provided by their groups served the needs of TB patients or not and whether working as a partnership would enable them to develop a TB control programme. However, for this study, it was hard to approach the private sector for the in-depth interview, therefore the in-depth interviews were conducted with the following concerned participants.

Health Care Providers at the BMA Health Center

A ten-bed BMA health care center is located in the community, providing both inpatient and outpatient services. The health care staff consists of two full-time physicians, 2 part-time physicians, 1 dentist, 1 pharmacist, 10 nurses, 1 social worker and a few support staff. The Director of BMA health care center, one part-time TB physician and one full-time TB nurse were asked for an in-depth interview.

NGO/ CBO staff

Although, there are several NGOs located in the community, Duang Prateep Foundation is, the oldest Community-Based Organization, for over 20 years, the most accepted one, in this community. The foundation provides a variety of services, including community development and community health. The Director of the Foundation was born and grew up there. She has worked hard to develop the community for years, thus, she was highly respected by the community residents. A

manger of the HIV/AIDS project of this foundation was requested for in-depth interview. Four staff of the HIV/AIDS project also joined as a partnership.

Community leaders

The community leaders were selected as representatives of the sub-community. They work closely with the GO and NGO's for community development and health. One of the active community leaders was asked for an in-depth interview.

Housewife groups

There are around 70 members working for the community. This group was established on a voluntary basis. The Duang Prateep Foundation takes a major role in the promotion of self-sustainability, to the members of the group, through several training programmes. In addition, the Foundation provides a micro credit fund. One active member of the housewife groups was invited for an in-depth interview. Five members of housewife groups joined as partnerships.

Youth groups

This volunteer group was established for young people who work for their community. They work closely with other community committees and the Duang Prateep Foundation, including other NGOs, targeting the youths in the community. One of the active youth representatives was invited for an IDI.

Former TB patient

Former TB patient who declared cured TB treatment of BMA health center 41 was, referred by TB nurse with voluntary, interviewed.

4.4 Sample Size

One third of the world's population is infected with the TB bacilli (WHO, 2001). Thus, the calculation of the sample size in this study was based the assumption that around 30 % of the adults in Klong Toei have been infected with the TB. Therefore, the calculation of the sample size in this study was based on the assumption that around 30% of population have had TB infection and that most of them were unable to access TB health services. Thus, the formula to calculate the sample size is

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

$$n = \frac{(1.96)^2 (0.3)(0.7)}{(0.05)^2}$$

$$n = 322$$

Total sample = 322 (the recruitment was 386cases, after addition of 20% fro sample loss of each gender)

N = estimated sample size

Z = standard normal score at significance level at 0.05 = 1.96

P = the proportion of adults infected with TB "p" = 0.3

d = absolute precision of this study is 0.05

Although the calculation of the sample size was 386, data was collective by questionnaires for 460 community residents, the difficulties of collecting information were recognized during the data collection. These questionnaires were completed for 430.

4.4.1 Eligibility Criteria

Since there were different subjects, inclusion criteria and exclusion criteria were used to recruit these samples as follows.

Inclusion criteria – for partnerships

- Age 18 years or more
- Informed consent
- Willing and Volunteer to participate
- Agree and commit to follow the ” mutual agreement”
- Residing in the Klong Toei community for at least 1 year
- Participated in previous meetings and workshops that were arranged by the researcher

Exclusion criteria

- Severe illness (too tired, severe cough)
- Communication problems
- Planed to leave this community for study or work within 1 year.

Inclusion Criteria - for on treatment TB patients

- Age 18 and above 18 years
- Smear-positive Pulmonary tuberculosis
- Enroll from 2005-2006
- Informed consent
- Residing in the Klong Toei community for at least 1 year

Exclusion criteria

- Smear-negative pulmonary tuberculosis
- Extra-pulmonary tuberculosis
- Severe illness (too tired, severe cough)
- Communication problem

Inclusion Criteria for former TB patiens (cured TB)

- Enrolled and declared cured, at the BMA health center 41 during July 2004-June 2005 (not more than one year after cure)
- No communication problem, able to speak and understand Thai language
- Age 18 years or more
- Informed consent
- Residing in the Klong Toei community for at least 1 year

Exclusion criteria

- Severely ill or mentally retarded
- Not willing to participate in this study
- Communication problem

4.4.2 Sampling technique

This study was divided into three phases study. The first phase was a formative study, which aimed to develop the partnerships. It was the preparation phase for the second phase. The second phase was the phase for data collection using both a quantitative and a qualitative approach by collaboration of the partnerships and the researcher. The third phase was the phase of TB control planning. In order to locate the subjects for data collection, multi-stage sampling had been used as follows.

Step 1: The Klong Toei slum community was selected by purposive sampling. Since the researcher has been working closely with the Duang Prateep Foundation as a volunteer consultant of HIV/AIDS project for more than ten years, which was an advantage for this research project, particularly for both the quantitative and qualitative data collection.

Step 2: Partnerships were also selected by purposive sampling. It aimed to develop partnerships that comprised of community leaders, housewife groups, youth

groups, former TB patients, TB care takers or guardians, NGO/ CBO staff, and health care providers. Partnerships participated in all three phases of the study, to identify the TB problem in their perception, data collection preparation, to collecting the data in second phase and developed the work plan, of TB control in the third phase.

The involvement of partnerships was critical, in the starting process. Although, the researcher was a volunteer consultant of HIV/AIDS project of Duang Prateep Foundation for many years, partnership recruitment and carried out the activities required by the trust, a long relationship and extraordinary energy including available infrastructures. Therefore, the study project cooperated with the staff of Duang Prateep Foundation to identify and contact key persons, or possible community groups who might become the core-working group. This was a purposive sampling and based on their interest, willingness and willing to join the study project.

Two meetings for partnership recruitment, were arranged to explain the purpose and objectives of this study, to fifty people, discuss mechanisms and the role of the partnership - aims and objectives, including clarifying the questions and to invite them to join this study. The principle to join as a partnership was, on a voluntary interest basic, no salary, regular and consistently participated in the meeting.

After self-screening/ assessment for readiness of participation, workshop under the title “community participation in TB control” was arranged twice times. Twenty participants (10 people withdrew) participated for each time, to overview the objective of this study, to identify the TB problem ,to raise awareness and the significance of community involvement, in TB control and to evaluate their perception on TB. TB vision and mission were also created during the workshops.

The third workshop was held to bring all 30 participants (10 people withdrew) who decided to join this study, to revise the community TB problems, their needs, and specified " my desirable community", including developed mission and vision on TB control in their community. Facilitator requested them to write the "key word" of their desire to see in their community. Then, TB vision and mission were developed in order to clearly define and understanding of the partnerships.

The process of each meeting provides an opportunity for a team to share their ideas, share experiences and think together to gain insights about each relevant issue. In order to get the effective workshops/meetings, the partnerships set the mutual agreement or ground rules as follows.

- Everyone is equally important.
- There is no right or wrong answer or opinion.
- Respect everyone's ideas.
- Different ideas are welcome.
- To make decision by consensus.
- Work together as a team.
- Set the phone to vibrate only, not ring
- Start and end on time

The partnerships also discussed, the schedule and logistical arrangements, for various meetings. The need assessment of the partnerships, were also assessed. Then, strengthening capacity activities on TB disease, which focused on knowledge and attitude on B disease and patients, were conducted for the partnerships. TB awareness raising workshops, were also held for the partnerships. These activities provided partnerships an understanding of the root of patients' problems by analyzing

the cause of the problem, tap into the effect of TB within the community and how community residents will interact with it.

The researcher acted as a facilitator to keep the workshop or the meeting on tract, to encourage the participants to participate, to moderate any conflicts, and monitor time in workshops or meetings. The facilitator had to listen to all ideas and ask for clarification if a point or a term was not understood or not clear and never made a decision, instead of the participants, but asked the group for a consensus. It was importance to draw conclusions at the end of each agenda item as a group agreement. More over, the two ways communication was used during the meeting or workshops. An assistant recorded the meetings to keep a written record of what happened and was said in the workshop or meeting. The meeting or workshop report was provided to partnerships before starting a new meeting each time. After each meeting, the next meeting was appointed in advance by suggestion and agreement of partnerships. In order to prevent the partnerships forgetting the meeting, researcher called to remind partnerships about the meeting date a couple days in advance before the meeting date.

The strategies used in the formative research were, based on the community mapping, interview guide including Focus Group Discussion (FGD) and in-depth interview guidelines, meetings, trainings and workshops. The results from the first phase were used to readjusted the study conceptual framework and for guiding the structure interview development. For more understanding, the figure 4.1 indicated the step of partnerships formulation and their activities.

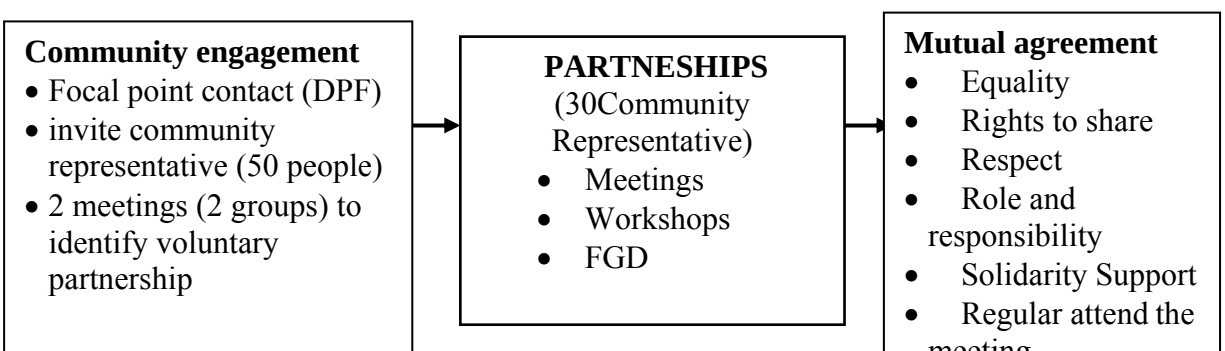


Figure 4.1: Partnership formations and their activities

Step 3: Purposive sampling, of the sub- community was recruited as the self-selected partnerships (the sample volunteers) who were residing in 14 sub-communities of the target area. This study is a participatory research, recruitment was done on voluntary and the willingness of partnerships (which is included in the inclusion criteria)

Step 4: Systemic random sampling, was chosen for households in each sub-community. The entry point for data collection was the neighbour of the community leader or community health volunteer's house, of each cluster. TB Working Group, teams were composed of community leader, youth, CBO staff, moved sequentially along walkways, to collect interviewees at seven households in each cluster. The rest of the partnerships (or Community Committee on TB), who lived inside that sub-community, gave the actual location conditions and assisted to introduce the research

team to the family member for interviewing. The population census of each sub-community was reviewed from the Klong Toei District and also checked with the community leaders again for data collection

Step 5: The samples were selected by simple random sampling, at their households, 1 family member of each household was recruited as follows:

Availability of family members, at the household and under the inclusion criteria. A door to door visit, was conducted for screening the availability, of family members in each household.

The multi-stage sampling was summarized as figure 4.2

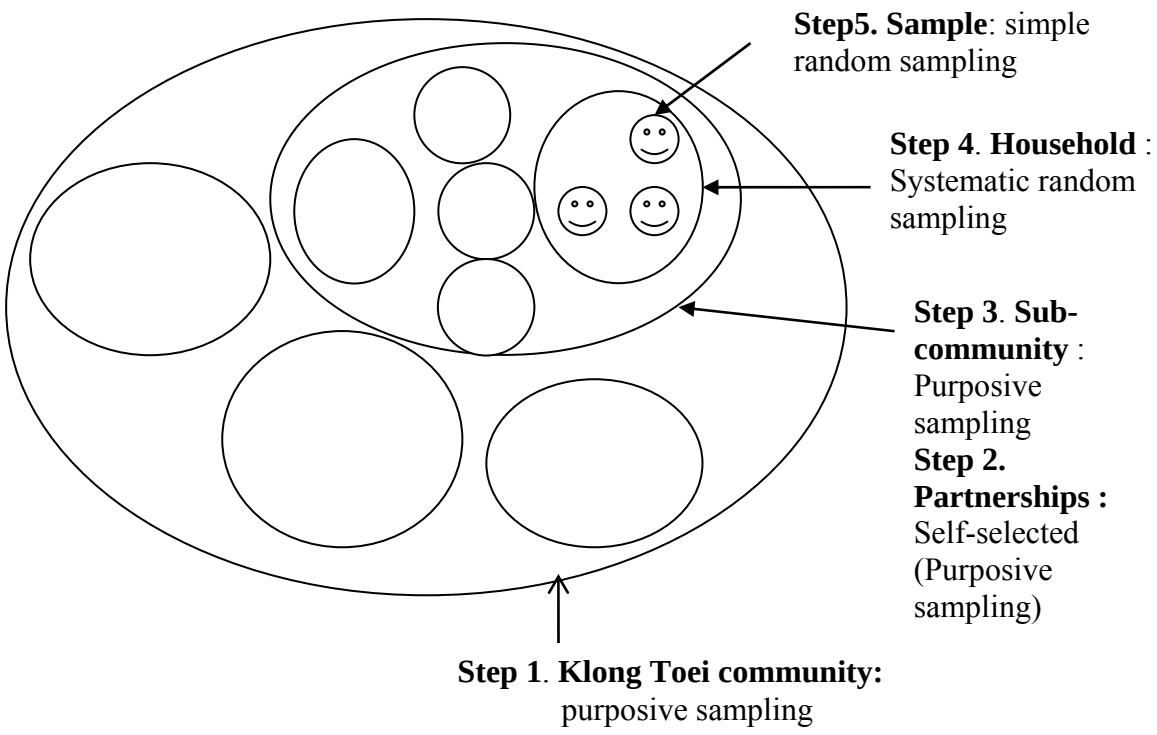


Figure 4.2: Multi-stage random sampling

4.5 DATA COLLECTION PROCEDURE

This study comprised of 3 phases as mentioned earlier. These were a formative study, data collection and TB control program planning respectively. All three phases were inter-relationship. Partnerships from phase I. was participated in collecting data and a formulated action plan. Together, the partnerships and researcher collaborated, to collect qualitative and quantitative data, to answer all research questions, of this study.

4.5.1 Phase I. Formative study and develop partnership

The representatives from community leaders, youth groups, house wife groups, community health volunteers, former TB patients (who declared cure treatment), TB care takers/ TB guardians, and DPF staff, formed as partnerships to participate in this study after attending the introduced research meeting and workshop. These partnerships was later called Community Committees on TB (CCTB), then, ten committees volunteered to join as research assistants for collecting data. These ten committees, named "the Working Group (WG)", were trained on how to obtain the quantitative data in phase II.

Community mapping

The community mapping provided an overview picture, of the community, such as the location, general characteristics, the environment, distribution and setting of households, also the relevant demographic feature of residents, the community organizations and the public facilities setting. This process also included community observation, which gave more understanding of the interaction of people, social interaction, physical setting, community events, documenting community resources,

services currently available. This was useful for sampling and planning for the study activities.

Key informants In - depth interview

In-depth interviews were conducted, in various groups who were involved in TB programs and the community. One person from each organization; the Director, a TB physician and a TB nurse of Health Center 41, a staff of the Duang Prateep Foundation, a community leader, a youth leader, a representative of the house wife groups and a declared cured TB patient. For those who are health providers, their existing TB policy and services, any obstacle or difficulties and attitude were probed. The study project was also introduced to them in order to invite them to participate in this research. The perception, knowledge, attitude regarding TB disease, TB policy and treatment, and their needs or suggestion were investigated. The in-depth interview guideline was prepared for the above groups. After permission of the department of Health of the BMA, the director of BMA health center and the head nurse, the interview and non-participant observation were proceeded for BMA health staff. The same procedure was proceeded with for the Duang Prateep Foundation's staff. A snowball technique was adopted for selecting the other key informants by assistance of DPF staff, except, former TB patients who were declared cured TB treatment was referred by TB nurse.

Consent was obtained prior interviews and using a tape recorded. Interview guideline was developed, to use as a tool. The interview each time took around 45 minutes to one hour with good collaboration from the interviewees. In some instances, the interviewer and interviewee, had known each other and used to work together for many years.

BMA health care facility non-participant observation

The observation, using unstructured observation, provides information about actual behaviour of on treatment TB patients, interaction between care providers and clients, waiting time, clients-providers communication, privacy, and other related TB services. General environment and characteristics such as physical setting, interaction of general staff were, also observed.

Focus group discussion

In the first phase, five sessions of the focus group discussions were conducted with partnerships (all CCTB) to explore the TB situation inside the community, to evaluate their experiences, perceptions, and attitude towards TB disease and TB patients. The groups were prepared for a homogeneous group by gender to make participants feel free during the discussion.

4.5.2 Phase II: Quantitative and Qualitative Data collection.

This phase both quantitative and qualitative data were conducted as per the following detail's.

Quantitative method

Quantitative method was carried out by WG and supervised by a researcher WG committees were trained, so that each had the same understanding regarding data collection procedures and the details of each question of the questionnaires. Data collection was conducted, among the community residents aged 18 years or more, by using a household survey. An interview manual had been established for interviewees, in order to maintain the quality of the data collection. In addition, the interviewers met with the researcher in the evening or the next of survey, for follow up and consultation. The household survey was conducted during the week-day evenings (4-6

PM) and the full time survey was organized during the weekend also the national holiday (10AM- 6PM). However, it could not interview everyday, as it was the rainy season. Some weeks had rain falling three days continuous, thus, it took one and a half months to complete.

Qualitative method

In this phase two main qualitative methods; IDI and FGDs were used for collecting data.

In-depth interview

A total of 5 former cured TB treatments and 5 TB patients who were on TB treatment, were purposively recruited to explore their perceptions, regarding the TB disease and existing services. These TB clients were approached through a TB nurse, as inclusion criteria, then, were referred to a researcher, when they came to a medical appointment. Researchers were asked to explain the purpose of the study to them with a view to eliciting their participation in the study. Interviews took, approximately 45-60 minutes, placed in the next building to the TB clinic. Participants got 200 Baht and UHI milk after they were interviewed.

Focus Group Discussion

The focus group discussions, were conducted among on treatment TB patients. at the BMA health center, after getting permission from the BMA health director. The focus group discussion participants, were recruited through a TB nurse, as purposive and inclusion criteria. The nine focus group discussions were scheduled with a TB nurse, during the weekend. A TB nurse informed TB patients a couple days in advance for the discussion appointment. FGD conducted after patients met the TB physician, in the morning. It took place in the next building to the TB clinic and

started around 10:00 -12:00 o'clock. Each group spent approximately 1-1 ½ hour. The FGD could not divide by gender as the number by gender was not sufficient. Some patients hurried back to work or had their own business. However, they were the homogenous group as they had the same background.

The focus group discussion guidelines, were developed, based on the conceptual framework for this project and applied the result a formative study. A researcher moderated the discussion and another note taker, recorded the data. The discussion of each group was taped with written consent of the participants. All participants got 200 Baht and some boxes of UHI milk after discussion.

4.5.3 Phase III: TB control programme formulation through community participation

The findings of Phase II. suggested that there was a gap, redundancy and fragmentation in the TB control programme in the study community. The three days workshop was arranged for the partnerships to evaluate the findings in order to develop the TB control programme. The importance of planning, planning steps, and findings from the study were discussed on the first day. Capacity building on planning knowledge, was also shared with participants. The action plan was formulated by 3 small groups of participants. Each group responded on each problem, the second day and the third day. The participants worked as a team through the brainstorming, discussion, and group work. An action plan was the out come of the third day workshop. (see the work plan of TB control programme in chapter 5).

4.5.4 Validity & Reliability

There are three types of validity: 1) content validity, 2) criterion related validity and 3) construct validity (Devellis, 1991). For this study, the researcher

adopted content validity. Draft questionnaires were developed, from the literature review and results of the formative study in phase I. Some Key concepts of Health Believe Model , the theory that was developed, during the 1950's and attempted to explain health behaviour, focusing on an Individual level, was also applied for draft questionnaires. The four principal components of this model are, (1) the individual's perception of their own personal susceptibility to disease (risk perception), (2) the perception of the severity of the disease, (3) the perception of the benefits from modifying behaviour and (4) the perception of the barriers to modifying behaviour, were integrated into the questionnaires. Then the experts in the filed of TB reviewed and gave comments, prior to the revision of the draft questionnaire.

The questionnaire was pre-tested for reliability of the questions, by 30 community residents, in a non-target slum in Bangkok. The internal consistency of the questionnaires, were calculated by Cronbach's alpha. A reliability coefficient of 0.7 is considered as achieving adequate reliability. According to the pre-testing it found that the Cronbach's alpha of the instrument was 0.71, therefore, it is considered with adequate reliability. Further more, the methodological triangulation was used for reliability, these included in-depth interviews focus group discussions and household surveys. Some words and order of questions were changed as the feedback of the respondents. The qualitative study, the methodological triangulation; unstructured - observation, in-depth interviews and focus group discussions, were also applied for the reliability of this research.

4.6 Measurements

There were 4 sets of variables that were measured as follows:

a. Socio- demographic factors

b. Individual factors

c. Health needs/problems

d. Accessibility to TB services

Table 4.2: Variables, Measurement Scale and Statistic Inference

Variables	Measurement Scale	Statistic Inference
A) Social-demographic		
Age	Ratio Scale	Percentage, Mean, S.D.
Gender	Nominal Scale	Number, Percentage
Education status	Ordinal Scale	Number, Percentage
Individual income	Ordinal Scale	Percentage, Mean, S.D.
Marital status	Ordinal Scale	Percentage, Mean, S.D.
Health insurance	Ordinal Scale	Frequency, Percentage
Living time in the community	Ratio Scale	Percentage, Mean, S.D.
Alcohol drinking	Nominal Scale	Number, percentage
Cigarette smoking	Nominal Scale	Number, percentage
B) Individual factors		
Risk perception Severity perception Services perception Practice perception Knowledge Attitude	Nominal scale	Number, Percentage
C) Health needs/problems		
Information	Nominal Scale	Frequency, Percentage
Social support	Ordinal Scale	Frequency, Percentage
D) Accessibility to TB services		
Geographic accessibility	Nominal Scale	Percentage, Mean, S.D.
Availability	Nominal Scale	Percentage, Mean, S.D.
Affordability	Nominal Scale	Percentage, Mean, S.D.
Acceptability	Nominal Scale	Percentage, Mean, S.D.

4.7 Data Analysis

Quantitative and qualitative data analysis as the following step.

4.7.1 Quantitative data analysis

To ensure accuracy, all records were keyed in twice by two independent data entry operators. Data was checked for errors and analyzed using the SPSS package. Descriptive statistics, i.e. number, percentage, mean and standard deviation (S.D.) of each, questions and variables obtained. Differences in socio-economic characteristics, TB knowledge, perceived risk, risky behavior (alcohol drinking and cigarette smoking), perceived severity, perceived practice, and social support, were examined using chi-square test. Multivariate analysis was used to find the relationship between the TB perception and the socio-economic variables (age, education, income, marital status,, gender and TB experience), through adjusted odds ratios (OR) with 95% confidence intervals. Differences were considered statistically significant if *P-value*≤ 0.05.

4.7.2 Qualitative data analysis

Grounded theory method was, originally developed by Glaser and Strauss (1967), applied to explain or describe the phenomena, that is relevant and problematic for those involved, under investigation the TB patients at BMA health care settings. Grounded theory is used to explore the social processes that are present within human interactions. Through grounded theory, researcher developed explanations of key social processes that are grounded in empirical data. In-depth interviews and focus group discussions audiotapes were transcribed immediately after the interview, then entered into a word processing package. The transcriptions were read and re-read to generate key categories based on coding. This step was reviewed several times to

ensure that perception pertaining to the same phenomenon. The use of a comprehensive topic list and a code-recode procedure were also proceeded. Two weeks later, the same data was recoded and we compared the results. Then, the categories and themes were identified. Content analysis was used, for analyzing the total data, made inductive conclusions from the findings into a larger theoretical picture of TB perception.

For more understanding about the data, the table 4.3 indicated the data collection procedure.

Table 4.3: Data collection procedure

Objectives	Indicators	Research Tools	Statistical Calculation
1. To develop a community partnership that comprises of representatives from various groups in the community (community leaders, youth groups, house wives groups, former TB patients, health service providers, CBO) to participate in this study.	• Representative of sample • Number of samples who • retain as partnerships • Number of partnerships • participated in meetings	• Participatory Meeting • Participatory training • Workshop	Frequency
2. To describe the nature and extent of existing TB services (both GO and NGO) for community residents and TB patients.	type / number of service	• Document reviewed • IDI, FGD	Frequency
3 To describe health seeking behavior of the community residents and TB patients.	• % of perception • type/ topics	• Questionnaire • IDI, -FGD	Chi-square test
4. To explore general TB perception of community residents and relationship of socio-economic factors with those perceptions.	• % of perception • type/ topics • P-value≤.05	• Questionnaire • IDI • FGD	- Frequency - Multivariate analysis
5. To determine TB service needs and the utilization of TB services, in terms of geographic accessibility, availability, affordability and acceptability, of the community residents and TB patients by socio-economic factors.	• % of services need and utilization • -type/ topics	• Questionnaire • IDI • FGD	Chi-square test
6. To develop an action plan to improve the effectiveness of a TB control program by community participation.	plan of action	• -Workshop	

4.8 Ethical Considerations

Ethical Consent from the Ethical Review Committee for Research Involving Human Research Subjects, Health Science group, Chulalongkorn University was obtained prior to beginning the study. All of the participants and the subjects were informed about the objectives and the processes of the study. Inform consents and information sheets were distributed to each target group. Written consent from participants were taken before conducting the research.

The voluntary nature of the study was emphasized at the time of recruitment and again at the start of the interview, IDI, or FGD. In addition, at any time during an interview, IDI, or FGD. a participant was free to refuse to participate or free to withdraw from the research at anytime without loss of benefits to which she or he would otherwise be entitled. The confidentiality of the data obtained during the study and anonymity was maintained. The privacy of the participants was fully respected. The household interviewers were trained to be research team prior to data collection.

Written consent was also obtained from the head of DPF to approve DPF's staff from the HIV/AIDS project, to participate in the activities of this study. For the BMA health provider, informed consent was obtained, from the BMA health Department then, the Director who is a head of medical officers at the BMA health center at the beginning of the study. The information sheet was given to the TB physician and TB nurse and verbal information consent was obtained from each individual health provider, before the IDI began. Their information sheet also stated, that once they were in the study, their services could be observed by a researcher at any time.

CHAPTER V
RESULTS

The study findings are presented in this chapter, in section 5.1) presents the development of community partnerships, 5.2) presents the nature and extent of existing TB services, 5.3) presents TB perception of the community residents and TB patients., 5.4). presents health seeking behaviors of the community residents and TB patients, 5.5) presents the determinants of accessibility of the TB services and 5.6) presents the intervention to improve TB control in the Klong Toei community.

PHASE I: DEVELOP PARTNERSHIP

5.1 Development of Community Partnerships

Partnership was developed as described in chapter IV.

PHASE II: DATA COLLECTION AND ANALYSIS

5.2 The Nature and Extent of Existing TB Services

There is government and private sectors which are related with health service and TB services inside the Klong Toei community as below.

5.2.1 Private sector

Drugstores

Drugstores were located scattering in the community. Also, some groceries also sold drugs for anti- common cold, including the convenient stores such as AM & PM, and Seven Eleven they sold some basic drugs such as lozenge for anti sore throat. Most drugstores work with or without a pharmacist or only have a pharmacist name in a license.

Private clinics

There are five private clinics with general practitioners in this community (Suttajit, 2002). There was a private clinic that belonged to a private hospital which is established inside the community to serve the universal health insurance scheme or 30 Bath scheme policies.

Private hospitals

There are at least three private hospitals (Dheptarin, Gluaynamthai, and Camillion) in the nearby community. One hospital (Gluaynamthai) participates in the universal health insurance scheme. Therefore, community residents who hold a gold card can select this hospital, they can use their insurance card (gold card or 30 baht card). However, community people have to visit Gluaynamthai's clinic first, then a physician will consider referring them to hospital if necessary.

NGOs

More than 30 NGOs work on the community development and health related issues for the Klong Toei community. Less than 10 NGOs work on health and health related problems. The smallest NGOs comprised of a few staff. For this study, the Duang Prateep Foundation (DFP) which was the biggest NGOs was purposive selected as the representative of the NGO's in this study. The DFP was established by the people in this community providing both community development and community health programs. DFP has launched numerous projects for community people in Klong Toei such as the "AIDS control project", the "Drug addict prevention campaign", the "Children art project", the "educational sponsorship" and the "New life for boy and girl". Most of the mentioned projects were preventive and primitive projects.

Others (Community organizations)

These included community leaders, youth groups and housewife groups.

- **Community leaders**

The community leaders were selected by people in their community (sub-community or cluster). Most of them were senior and well known in their communities. Their role was a representative of people in the community working closely with the government sectors and related organizations for community development. Only some of them used to attend a TB training that was provided by the DPF.

- **Community Health Volunteer (CHV)**

The community health volunteer (CHV) works on a voluntary basis under the supervision of BMA Health Center 41. They had been trained for a short period of time for basic public health knowledge. Their role was a health communicator and health educator. However, less than half of them were actively working, particularly for TB activity *(interviewed TB nurse of BMA health center10 and 41).*

- **Housewife group**

The housewife groups were established targeting on income generating. This group worked closely with DPF, some of them worked with DPF for an educational scholarship for children and young people. At the same time this group was a target group of the DPF for strengthening capacity in various projects, such as HIV/AIDS prevention and care, TB education.

- **Youth groups**

Youth groups were established on a voluntary basis. Their activities were targeting the children and young people in the community. However, only some of them were active such as the Jigsaw group, the Ninja group. Both Jigsaw and Ninja group were also working on HIV/AIDS education prevention for the youth population in their community.

- **Traditional healer**

As per in-depth interviews and focus group discussions, it found that there are traditional healers which comprise of traditional massage, herbal healer and shaman in the community. They are one of the alternatives for health care seeking particularly for elderly. From in-depth interview of TB patients, they knew who the traditional healers were but, they had never visited these people for their illness.

5.2.2 Public sector

The existing health services in the community were classified into four levels according to the level of care of the Ministry of Public Health. These were primary healthcare level, primary care level, secondary care level and tertiary care level (MOPH, 1998). These levels are described below.

Primary healthcare level. The local organizations implemented by a community health volunteer (CHV), who is a community member, providing very basic health-related services, health promotion/education and dissemination of health information. Besides, NGOs staff, schoolteachers and some community leaders/housewife group/youth group also provide these services. Only two NGOs; the DPF and the Mercy center (Human Development foundation), and CHV work on TB activities. The Mercy center would survey and provided TB treatment for their

PLWHA who were admitted to their hospice only. While, the DPF provided TB education to housewife groups and youth group with the limitations that the community organizations had limited knowledge toward TB. This was a gap in needs and services.

Primary care level. This level was responded by the Health centers and private clinics. The services focus on medical dimension which provided physicians and health staff. However, service differences were found among private clinics and health centers. The services of health centers were health promotion, disease prevention and curative care. The health staff of BMA HC had implemented health programs according to the standard procedures established by the BMA. Health Centers has a TB clinic to provide TB diagnosis and treatment under DOTS strategy. TB treatment is covered by the 30 Baht scheme policy, in practice, everyone (both Thai and non-Thai) no need to pay for the services. Private clinics mainly focused on curative care, and they usually worked independently. This was a redundancy and fragmentation of services.

Secondary care. This category included community hospitals, and small- or medium-sized private hospitals. In Bangkok, there are several government and private hospitals available in Bangkok, thus a community hospital is unnecessary. However, the health centers 41 were upgraded to a 10-bed health center and fixed office hours services. There appeared to be a service redundancy and fragmentation of healthcare services. .

Tertiary care. This level has health personnel, medical, medical specialists to provide health services. These included the general hospitals, university hospitals and large private hospitals (> 100 beds, with medical specialists). Most respondents

reported that they visited a hospital when they had severe illness and/or the illness was getting worse. However, most tertiary care health services were provided during fixed office hours, which indicate a gap in health services. In addition, all hospitals, both government and private, worked independently, with little or without coordination between them. This indicated a fragmented of TB services.

The existing TB services in the Klong Toei community are divided into 2 types; public and private sector (clinic, hospital and NGOs). TB services are also divided into two types; biomedical and social approaches. Medical dimension aims to cure patient under DOTS strategy while the social dimension aims to increase TB knowledge for community residents that was promoted by DPF. However, there were questions regarding quality (results evaluation), consistency and sustainability of those activities for both parties. Both programmed that were launched by the government and private agencies (profit and non-profit) never coordinated their TB activities to each other. This reflected the fragmentation of the TB control programmed in this community.

The evidence of selected health care facility under the policy 30 Baht scheme of community respondents reflected that majority of respondents (53.3%) preferred private health services (Gluaynamthai hospital) than government services (23.2% health center; 95.7% selected Health center 41) with hope that the private services would meet their needs.

It can conclude that there were gaps, fragmentation and redundancy of the existing TB services for the Klong Toei community residents, that might lead to poor TB control.

5.2.3 Characteristics and Services of TB clinic of BMA Health Center 41

5.2.3.1 General Characteristics of TB clinic of BMA Health Center41

The BMA health center 41 is located in an urban congested community in Bangkok. Community people can gain access to this center by vehicle or on foot since it takes only 5 minutes from the main road. It provides health services only for out patient every working day, Monday to Friday from 07:30a.m. - 3.30 p.m. There are three buildings, the first building is a one floor gymnasium building that every one can use this service includes a meeting place for the elderly club, next is a TB clinic and the last one just opposite to the first one is the general Out Patient Department (O.P.D) and administrative team office. There is a small herbal garden beside the pathway to the TB clinic. Next from the TB clinic is a methadone therapy clinic which shares the same open air floor with the TB clinic. There are many seats that are enough for TB patients waiting for the physician or the nurse. A nurse station is near the patients' seats. Behind the nurse station is a medicine cabinet, a refrigerator and a basin for hand washing or cleaning. There was an examination room behind the nurse's station. Patients reported their satisfaction on the comfort, cleanliness and privacy of waiting area and examination room.

The TB clinic will provides a daily TB medication service (DOT) on Monday to Friday during office hours. TB patients will come to take TB medicine at the TB clinic in the morning on those days. For those who have appointment with a TB physician, they must come only on Tuesday or Thursday morning. A part-time TB physician, who is a TB expert and retired from the BMA hospital, will visit TB patients only on Tuesday and Thursday during 07:30 a.m. till 12:00 noon DOTS has been adopted for TB patients as the BMA policy. HIV voluntary counseling, testing,

also has been served for TB patients. There is only one nurse who is responsible for running the service. Also only one female cleaner who always gives hand to elderly patients and or anyone who could not walk. She will support with the hand to those patients without feeling of disgust. Sometime the patient is too tired to start the motorcycle she is enthusiastic to do that for patients.

5.2.3.2 Treatment and prevention Procedures

A nurse who has received TB training, assists a physician in dispensing pills, and make appointment with the patients. She also, greeted, answered the questions, gave short TB education, and discussed problems related to TB with patients in a friendly way. Some patients talked together, some patients kept quiet due to too tired to talk or did not know what to talk about during waiting for a physician. Some patients sat out to get sun bath in front of the door of the TB clinic. Many patients coughed without covering their mouths while they are waiting a physician. Some looked healthy as they were almost cured while the others looked thin, old and tired as they had just enrolled for treatment.

Actually, TB patients who have been taking an initial 2-weeks TB treatment or active TB and or have drug-resistance will be advised to use a mask to cover their mouths and noses. TB patients, who come for treatment, follow up and or new patients have to see a physician as a queue number on Tuesday and Thursday morning. The rest who come to take medicine can immediately swallow TB pills in front of TB nurse whenever they arrive no need to wait for physician not until their appointment. Most of TB men who work for a daily wage will come to the center in the early morning to take medicine and hurry to go to work.

There are two chairs; one for patient and another one for a physician inside an examination room. The room dimension is 3X3 meters. The patients who are under the condition of using mask will cover their mouths and noses all the time while they are in TB clinic and take it off before leaving the center. A physician will provide time for talking and giving advice to patients regarding their sickness, duration of treatment in order to ensure adherence to therapy. If the patients have no money for transportation, the TB clinic will subsidize it which can cover transport expenditure for them around 10-30 Baht (28-85 US cent) per time.

TB nurse will visit TB patients to follow up and facilitate defaulter retrieval in order to prevent patient drop-out of DOTS continue DOTS to ensure treatment success every Tuesday and Thursday afternoon. The rest of working day, she has to work at O.P.D.

5.2.3.3 The current diagnostic and treatment

TB clinic, BMA health center 41 will detect TB suspected cases through chest radiography and bacteriological examination by sending the sputum of the persons who have a chronic cough more than 3 weeks to BMA center. In case of sputum culture requirement, it will be sent to TB cluster, MOPH.

5.2.3.4 Interaction of care providers and patients

As the observation and reporting of respondents found that interactions and the level of respect and helpfulness of the health care providers, including staff and the adequacy of the time spent with a physician met the patients' needs. Patients were treated with friendship, courtesy and respect by them. Other staff were also helpful to the patients without discrimination, such as supporting the patients by starting the motorcycle for weak patients who were too tired to do

themselves, showed the respect to patients by their words, good communication. Health care providers listened carefully to them and explained things so they could understand. Health care providers showed respect for what they had to say. Health care providers spent enough time with them.

5.3 TB Perception of the Community residents and TB Patients

5.3.1 TB Perception of the community residents (Quantitative study)

A household survey was conducted among adults 18 years and older who had lived inside the Klong Toei community more than one year. Of 430 households visited containing 2,131 household members. There were 42 TB cases which 9 TB patients are on medication at the study time and 33 cases used to get TB treatment.

5.3.1.1 Characteristics of the respondents

The general characteristics of community respondents are summarized in Table 5.1. Of the 430 community residents interviewed, 302 (70.2%) were females. Aged ranged from 18 to 78 years (mean39.2 years, SD 12.7).Majority of respondents (6.5%) were aged 59 years, 40 (5.6%) and 18 (4.4%) respectively. About one-third of the respondents (29.3%) were between 35-44 years. Most of respondents (71.4%) were couples, whether their marriage had license or not. 19.3% were single respondents.

Only 9.8% of the community residents were illiterate. The majority (56.3%) had an educational background primary school. 96.2% of them are Buddhist.

35.1% were unemployed; house-wives or students. For those who were unemployed, they got financial support from spouse or parents or their

offspring's. Of 279 community residents interviewed on their occupation, the majority (40.5%) were self-employed such as food traders, 24.4% were employees or laborer and others.

23.7% of them earned less than 100 Baht per day, while the majority (40.5%) got between 101-200 Baht per day. It reflected that their income was not enough and had debt that was high up o 40.3%. Even if they had enough income but it was not enough for savings (35.4%). Average time of living in the community was 11-20 years (28.6%). 69.1% of respondents had family member around 1-5 people. 26.2% of respondents had family member 6-10 people.

12.3% of respondents did not have any kinds of health card. The majority of respondents (79.8%) held a 30 Baht Health Care Scheme (under the Universal Health Coverage Program of Thailand)

Table 5.1: Characteristics of the respondents

Respondents characteristics	Male (n=128) n (29.8%)	Female (n=302) n (70.2%)	Total (n=430) n (100%)
Age group (years)			
18-24	26(20.3)	46(15.2)	72(16.7)
25-34	22(17.2)	60(19.9)	82(19.1)
35-44	33(25.8)	93(30.8)	126(29.3)
45-54	23(18.0)	62(20.5)	85(19.8)
54+	24(18.8)	41(13.6)	65(15.1)
Total	128(100.0)	302(100.0)	430(100.0)
Mean =39.19 S.D.=12.72 Range 18-78			
Marital Status			
Single	44(34.4)	39(12.9)	83(19.3)
Couple (whether marriage registration or not)	79(61.4)	228(75.5)	307(71.4)
Divorced, Separated, Widowed	5(3.9)	35(11.6)	40(9.3)
Total	128(100.0)	302(100.0)	430(100.0)
Education			
Illiterate	6(4.6)	36(11.9)	42(9.8)
Literate	122 (95.3)	266 (88.1)	388 (90.2)
Total	128(100.0)	302(100.0)	430(100.0)
Literate			
Primary school	66(54.1)	176(66.2)	242(62.4)
High school	39(31.9)	65(24.4)	104(26.8)
Vocational school	12(9.9)	20(7.5)	32(8.2)
University	5(4.1)	5(1.9)	10(2.6)
Total	122 (100.0)	266 (100.0)	388 (100.0
Religion			
Buddhist	120(95.2)	289(96.7)	409(96.2)
Christian	4(3.2)	4(1.3)	8(1.9)
Muslim	2(1.6)	6(2.0)	8(1.9)
Total	126(100.0)	299(100.0)	425(100.0)
Occupation			
Unemployed/student/housewife	29(22.7)	122(40.4)	151(35.1)
Employee/worker	44(34.4)	38(12.6)	82(19.1)
Vender/own employer (food shop)	46(35.9)	128(42.4)	174(40.5)
Others	9(7.0)	14(4.6)	23(5.3)
Total	128(100.0)	302(100.0)	430(100.0)

Table 5.1: (Continue) Characteristics of the respondents

Respondents characteristics	Male (n=128) n (29.8%)	Female (n=302) n (70.2%)	Total (n=430) n (100%)
Income (baht per day)			
≤ 100	24(20.5)	78(25.8)	102(23.7)
101-200	43(33.6)	152(50.3)	195(45.3)
201-300	41(32.0)	41(13.6)	82(19.1)
301+	20(15.6)	31(10.3)	51(11.9)
Total	128(100.0)	302(100.0)	430(100.0)
Income Sufficiency			
Not enough and have debt	47(37.3)	125(41.5)	172(40.3)
Enough but no have for saving	50(39.7)	101(33.6)	151(35.4)
Enough for saving	28(22.2)	67(22.3)	95(22.2)
Not enough but no have debt	1(0.8)	8(2.7)	9(2.1)
Total	126(100.0)	301(100.0)	427(100.0)
Living time in community (year)			
1-10	22(17.9)	66(22.8)	88(21.4)
11-20	40(32.5)	78(27.0)	118(28.6)
21-30	29(23.6)	65(22.5)	94(22.8)
>30	32(26.0)	80(27.7)	112(27.2)
Total	123(100.0)	286(100.0)	412(100.0)
Number of family member in a house			
1-5	97(75.8)	199(66.3)	296(69.1)
6-10	25(19.5)	87(29.0)	112(26.2)
>10	6(4.7)	14(4.7)	20(4.7)
Total	128(100.0)	300(100.0)	428(100.0)
Do you hold any health cards?			
No	24(18.8)	29(9.6)	53(12.3)
Yes	104(81.2)	273(91.4)	377(87.7)
Total	128(100.0)	302(100.0)	430(100.0)
If yes, what kind of health card			
30 baht card	72(69.2)	229(83.9)	301(79.8)
Social insurance card	21(20.2)	26(9.5)	47(12.5)
Others	11(10.6)	18(6.6)	29(7.7)

5.3.1.2 Risk behavior of the respondents

Besides, some respondents that have risk behavior and it will Result in vulnerability to TB. The study found that 24.2% of respondents smoked cigarette and among 41.3 % drank alcohol. By 27.9% daily used alcohol as Table 5.2

Table 5.2: Risk behavior of the respondents.

Respondents characteristics	Male (n=128) n (29.8%)	Female (n=302) n (70.2%)	Total (n=430) n (100%)
Current smoking			
No	70(54.7)	256(84.8)	326(75.8)
Yes	58(45.3)	46(15.2)	104(24.2)
Total	128(100.0)	302(100.0)	430(100.0)
Current using alcohol			
No	43(33.6)	209(69.4)	252(58.7)
Yes	85(66.4)	92(30.6)	177(41.3)
Total	128(100.0)	301(100.0)	429(100.0)

5.3.1.3 TB experienced of the respondents

92.3% of community respondents had heard about TB. There were 10.3% who had family members that used to be TB patients as Table 5.3

Table 5.3: TB experiences of the respondents

Respondents characteristics	Male (n=128) n (29.8%)	Female (n=302) n (70.2%)	Total (n=430) n (100%)
Have you ever heard about TB?			
No	14(10.9)	19(6.3)	33(7.7)
Yes	114(89.1)	283(93.7)	397(92.3)
Total	128(100.0)	302(100.0)	430(100.0)
Do any of your family member have TB disease?			
No	112(87.5)	265(88.0)	377(87.9)
Yes	9(7.0)	35(11.6)	44(10.3)
Do not know	7(5.5)	1(0,3)	8(1.9)
Total	128(100.0)	301(100.0)	429(100.0)

5.3.1.4 Top five problems of the community

The top five priority problems, which respondents concerned, comprised of a dislodgement from Port Authority, poverty, unclean sanitation, unsafe community (fire), and unemployed (55,1%, 53.9%, 38.1%, 34.3%, and 23.2%) respectively as Table 5.4.

Table 5.4**:** Top five problems of the community (that make community residents unhappy).

Respondents' opinion	**Male (n=128) n (29.8%)**	**Female (n=302) n (70.2%)**	**Total (n=430) n (100%)**
1. A dislodgment of dwelling place problem			
Yes	52(46.8)	152(58.7)	204(55.1)
No	59(53.2)	107(41.3)	166(44.9)
Total	111(100.0)	259(100.0)	370(100.0)
2. Poverty			
Yes	48(48.0)	119(56.7)	167(53.9)
No	52(52.0)	91(43.3)	143(46.1)
Total	100(100.0)	210(100.0)	310(100.0)
3. Unclean environment inside community			
Yes	52(45.2)	94(34.9)	146(38.0)
No	63(54.8)	175(65.1)	238(62.0)
Total	115(100.0)	269(100.0)	384(100.0)
4. Unsafe community			
Yes	36(30.3)	98(36.0)	134(34.3)
No	83(69.7)	174(64.0)	257(65.7)
Total	119(100.0)	272(100.0)	391(100.0)
5. Unemployed problem			
Yes	27(23.5)	61(23.0)	88(23.2)
No	88(76.5)	204(77.0)	292(76.8)
Total	115(100.0)	265(100.0)	380(100.0)

5.3.1.5 Top seven social problems that needed for solution

Top seven social problems of the Klong Toei community that the community respondents needed to solve were comprised of narcotic (illicit drug

problem, poverty, dislodgment of dwelling, unsafe inside community (fire), and sanitation problems (78.9, 78.5%, 77.65, 58.4%, 57.4%) respectively. TB problems were ranked as 7th priority of 30.1% of respondents as Table 5.5

Table 5.5: The top seven social problems that needed solution.

Respondents' opinion	**Male (n=128) n (29.8%)**	**Female (n=302) n (70.2%)**	**Total (n=430) n (100%)**
1. Illicit drug problem			
Yes	70(81.4)	151(77.8)	221(78.9)
No	16(18.6)	43(22.2)	59(21.1)
Total	86(100.0)	194(100.0)	280(100.0)
2. Poverty problem			
Yes	72(78.3)	172(78.50	244(78.5)
No	20(21.7)	47(21,5)	67(21.50
Total	92(100.0)	219(100.0)	311(100.0)
3.A dwelling place problem (be demolished, demolition)			
Yes	72(80.0)	167(76.6)	239(77.6)
No	18(20.0)	51(23.4)	69(22.4)
Total	90(100.0)	218(100.0)	308(100.0)
4.Unsafe inside community			
Yes	56(58.90	130(55.1)	201(58.4)
No	37(34.3)	106(44.9)	143(41.6)
Total	95(100.0)	236(100.0)	344(100.0)
5.Unclean environment inside community			
Yes	56(58.9)	122(56.7)	178(57.4)
No	39(41.1)	93(43.3)	132(42.6)
Total	95(100.0)	215(100.0	310(100.0)
6. HIV/AIDS problem			
Yes	41(43.2)	70(31.1)	111(34.7)
No	54(56.8)	155(68.9)	209(65.3)
Total	95(100.0)	225(100.0)	320(100.0)
7. TB problem			
Yes	30(30.6)	71(29.8)	101(30.1)
No	68(69.4)	167(70.2)	235(69.9)
Total	98(100.0)	238(100.0)	336(100.0)

5.3.1.6 TB risk perception of the respondents

Risk perception between male and female were analyzed by Chi-square test found that there was not found the difference between male and female on their own risk perception. Most of respondents indicated that living in slum increased risk of getting TB. 74.5 % of respondents disagree that eating and drinking with TB patient would make them have TB. 67.1% of respondents disagreed that they could get TB if they touched the blood of TB patient. Their own perception were shown as table 5.6.

Table 5.6: TB risk perception

TB risk perception of respondents	Male (n=128) n(29.8%)	Female (n=302) n(70.2%)	Total	*P* value
1. Does living in slum increase risk of getting TB?				
Agree	90(70.8)	228(75.5)	318(74.1)	0.427
Disagree	19(15.0)	44(14.6)	63(14.7)	
Not sure	18(14.2)	30(9.9)	48(11.2)	
Total	127(100.0)	302(100.0)	429(100.0)	
2. Will eating and drinking together with TB patient cause you have TB?				
Agree	9(7.1)	25(8.3)	34(7.9)	0.901
Disagree	95(74.8)	223(74.3)	318(74.5)	
Not sure	23(18.1)	52(17.30	75(17.6)	
Total	127(100.0)	300(100.0)	427(100.0)	
3. Can you get TB if you touch blood of TB patients?				
Agree	10(7.9)	39(12.9)	49(11.4)	0.171
Disagree	93(73.2)	195(64.6)	288(67.1)	
Not sure	24(18.9)	68(22.5)	92(21.5)	
Total	127(100.0)	302(100.0)	429(100.0)	

5.3.1.7 TB risk perception on PLWHA

Generally, TB risk perception on PLWHA of male and female were not-significant. The majority of respondents knew that PLWHA had a higher risk to get TB than other people and agreed that the TB germs of PLWHA was not more serious than other (79.9%, 73.8% respectively) as detailed of table 5.7

Table 5.7: TB risk perception on PLWHA

TB risk perception on PLWHA	Male (n=128) n(29.8%)	Female (n=302) n(70.2%)	Total	*P* value
1. Are PLWHA more likely to have higher risk to have TB than other people?				
Agree	108(85.0)	234(77.7)	342(79.9)	0.068
Disagree	8(6.3)	15(5.0)	23(5.4)	
Not sure	11(8.7)	52(17.3)	63(14.7)	
Total	127(100.0)	301(100.0)	428(100.0)	
2. Is TB germ from PLWHA more serious than general TB patients?				
Agree	7(5.5)	13(4.3)	20(4.7)	0.764
Disagree	91(71.70	225(74.8)	316(73.8)	
Not sure	29(22.8)	63(20.9)	92(21.5)	
Total	127(100.0)	301(100.0)	428(100.0)	

5.3.1.8 TB severity perception of the respondents

Nearly 90% of respondents pointed that TB is a chronic disease. While 47.2% of respondents considered that it is not a dangerous disease. However, only 33.5% of respondents knew that anyone who have TB, it does not mean that they always have AIDS. Only 24.2% of respondents knew that cured TB treatment have a chance of disease recurrence. 52% of respondents pointed that TB is treatable (curable) even in PLWHA. Generally, TB severity perception of male and female was not different. Severity perception of community respondents were showed as table 5.8.

Table 5.8: TB severity perception

TB risk perception of respondents	Male (n=128) n(29.8%)	Female (n=302) n(70.2%)	Total	*P* value
1. Is TB a chronic disease?				
Agree	115(89.9)	269(89.0)	384(89.3)	0.914
Disagree	4(3.1)	12(4.0)	16(3.7)	
Not sure	9(7.0)	21(7.0)	30(7.0)	
Total	128(100.0)	302(100.0)	430(100.0)	
2. Is TB a dangerous disease ?				
Agree	38(29.9)	86(28.6)	1124(29.0)	0.720
Disagree	62(48.8)	140(46.5)	202(47.2)	
Not sure	27(21.3)	75(24.9)	102(23.8)	
Total	127(100.0)	301(100.0)	428(100.0)	
3. Does anyone who has TB, it means that s/he has HIV/AIDS?				
Agree	48(38.1)	100(33.2)	148(34.7)	0.458
Disagree	43(34.1)	100(33.2)	143(33.5)	
Not sure	35(27.8)	101(33.6)	136(31.8)	
Total	126(100.0)	301(100.0)	427(100.0)	
4. Will TB patients who cured treatment have chance to have TB again?				
Agree	28(22.0)	75(25.2)	103(24.2)	0.633
Disagree	48(37.8)	117(39.2)	165(38.8)	
Not sure	51(40.2)	106(35.6)	157(37.0)	
Total	127(100.0)	298(100.0)	425(100.0)	
5. Is TB in PLWHA treatable?				
Agree	18(14.2)	49(16.2)	67(15.6)	0.413
Disagree	62(48.8)	161(53.3)	223(52.0)	
Not sure	47(37.0)	92(30.5)	139(32.4)	
Total	127(100.0)	302(100.0)	429(100.0)	

5.3.1.9 TB Prevention Perception

Generally, TB prevention perception of male and female was not different. Only 52.o% knew that people who got BCG vaccination might have a chance to have TB. 44.1% thought that TB patients could stop taking medicine by themselves whenever feeling better. 40. 2% of respondents thought that TB patients should not live in the community. While 40.4% of respondents thought that closing the window would prevent them from TB infection. Details of TB Prevention Perception as table 5.9.

Table 5.9: TB Prevention Perception.

TB prevention perception of respondents	Male (n=128) n(29.8%)	Female (n=302) n(70.2%)	Total	*P* value
1. Will people who got BCG vaccination never have TB anymore?				
Agree	20 (15.60)	42 (14.0)	62 (14.4)	0.894
Disagree	65 (50.80)	158 (52.5)	228 (52.0)	
Not sure	43 (33.6)	101 933.5)	144 (33.6)	
Total	128 (100.0)	301 (100.0)	429(100.0)	
2. Can TB patients stop taking medicine by themselves if they feel better?				
Agree	61 (47.7)	128 (42.5)	189 (44.1)	0.614
Disagree	37 (28.9)	94 (31.2)	131 (30.5)	
Not sure	30 (23.4)	79 (26.30	109 (25.4)	
Total	128 (100.0)	301 (100.0)	429 100.0)	
3. Should TB patients live in the community ?				
Agree	58 (46.0)	136 (45.0)	194 (45.3)	.930
Disagree	51 (40.5)	121 (40.1)	172 (40.2)	
Not sure	17 (13.5)	45 (14.9)	62 (14.5)	
Total	126 (100.0)	302 (100.0)	428(100.0)	
4. Can we prevent TB infection by closing the window?				
Agree	50 (39.7)	123 (40.7)	173 (40.4)	.783
Disagree	37 (28.9)	79 (26.2)	116 (27.1)	
Not sure	39 (31.0)	100 (33.1)	139 (32.5)	
Total	126 (100.0)	302 (100.0)	428(100.0)	

5.3.1.10 Attitude Toward TB -HIV

Both male and female respondents had no different attitude toward TB patients who have HIV/AIDS. Only 42.3% of respondents agreed that we must treat TB even in PLWHA. However, it was high to 47.5% preferred to live with PLWHA than TB patient. Details if attitude toward TB patients shown on table 5.10

Table 5.10: Attitude toward PLWHA

TB prevention perception of respondents	Male (n=128) n(29.8%)	Female (n=302) n(70.2%)	Total	*P* value
1. Do we must treat TB in PLWHA ?				
Agree	38 (29.7)	82 (27.2)	120 (27.9)	0.630
Disagree	56 (43.7)	126 (41.70	182 (42.3)	
Not sure	34 (26.6)	94 (31.1)	128 (29.8)	
Total	128 (100.0)	302 (100.0)	430 (100.0)	
2. Do you prefer to live with PLWHA than TB patient?				
Agree	52 (41.5)	151 (50.2)	203 (47.5)	0.108
Disagree	33 (26.20	54 (17.9)	87 (20.4)	
Not sure	41 (32.50	96 (31.9)	137 (32.1)	
Total	127 (100.0)	302 (100.0)	429 (100.0)	

5.3.1.11 TB Service Perception

The TB service perception about the efficiency on TB treatment between the Health Center and the big government (public) hospital is significant different by gender (.026). 60.1% of the respondents agreed that both of them have equal treatment efficiency. While, 69.8% believed that TB patients could get free of charge treatment by using 30 baht card or a social insurance card. 56% of the respondents believed that the quality of TB medicine that they got from using 30 baht

card or social insurance card was the same as big government hospital as the details of table 5.11.

Table 5.11: TB Service Perception

TB prevention perception of respondents	Male (n=128) n(29.8%)	Female (n=302) n(70.2%)	Total	*P* value
1. Can TB patient get free of charge treatment by using 30 baht card or social insurance card?				
Agree	79 (61.7)	221 (73.2)	300 (69.8)	.061
Disagree	18 (14.1)	30 (9.9)	48 (11.2)	
Not sure	31 (24.2)	51 (16.9)	82 (19.1)	
Total	128 (100.0)	302 (100.0)	430 (100.0)	
2. Is the quality of TB medicine from using 30 baht card or social insurance the same as big Go hospital?				
Agree	68 (53.1)	173 (57.3)	241 (56.0)	.514
Disagree	25 (19.5)	62 (20.5)	87 (20.2)	
Not sure	35 (27.3)	67 (22.2)	102 (23.7)	
Total	128 (100.0)	302 (100.0)	430 (100.0)	
3. Is the efficiency on TB treatment of Health Center the same as big Go hospital?				
Agree	65 (50.8)	193 (64.1)	258 (60.1)	.026*
Disagree	22 (17.2)	44 (14.6)	66 (15.4)	
Not sure	41 (32.0)	64 (21.3)	105 (24.5)	
Total	128 (100.0)	301 (100.0)	429 (100.0)	

5.3.1.12 Participation Perception

There were statistical significances between male and female with 95% CI on the TB campaign participation and being a TB volunteer.78.3% (P-value .003) of them were more likely to participate in TB training more than to be a volunteer to take care of TB patients. Most of them needed to promote cured TB patients to be TB campaigner as detailed of table 5.12

Table 5.12: Participation Perception

TB prevention perception of respondents	Male (n=128) n(29.8%)	Female (n=302) n(70.2%)	Total	*P* value
1. Will you participate in TB training?				
Agree	88 (68.8)	248 (82.4)	336 (78.3)	.003*
Disagree	9 (7.0)	7 (2.3)	16 (3.7)	
Not sure	31 (24.2)	46 (15.3)	77 (17.9)	
Total	128 (100.0)	301 (100.0)	429 (100.0)	
2. Will you volunteer to be TB care taker ?				
Agree	78 (60.9)	195 (64.8)	273 (63.6)	.006*
Disagree	17 (13.3)	14 (4.7)	31 (7.2)	
Not sure	33 (25.8)	92 (30.6)	125 (29.1)	
Total	128 (100.0)	301 (100.0)	429 (100.0)	
3. Should we promote TB patient to be TB campaigner to increased community awareness?				
Agree	115 (89.8)	281 (93.4)	396 (92.3)	.445
Disagree	1 (0.8)	2 (0.7)	3 (0.7)	
Not sure	12 (9.4)	18 (6.0)	30 (7.0)	
Total	128 (100.0)	301 (100.0)	429 (100.0)	

5.3.1.13 The Relationship between Socio-economic Factors and TB Perception

Logistic regression analysis found the statistical relationship of the socio-economic factors (age, education income, marriage status, gender, and TB experienced) and the perceptions of sample size as below.

Self-risk perception

- Does living in slum increase risk of getting TB?
- Can you get TB if you touch blood of TB patients?

TB preventive perception

- Should TB patients live in the community ?

Attitude Toward TB Patient

- Do we must treat TB in PLWHA ?

The Relationship Between Socio-economic Factors and Self-risk perception as table 5.13 and table 5.14

Table 5.13: The Relationship between Socio-economic Factors and Self-risk Perception about Living in the Slum Increase Risk of Getting TB

Factors	B	OR	95% CI for OR	P-Value
Age	.005	1.005	.984, 1.026	.656
Education	-.307	.736	.301, 1.799	.501
Income	.002	1.002	1.000, 1.003	.068
Divorce	.402	1.495	.571, 3.916	.413
Couple	.808	2.244	1.185, 4.250	.013
Female	.118	1.125	.655, 1.932	.669
Experience with TB	-.073	.930	.440, 1.965	.848
Constant	.149	1.160		.824

The model is Corrected knowledge = .149 + .005 (Age) - .307 (Education) + .002 (Income) + .402 (Marital status: Divorce) + .808 (Marital status: Couple) + .118 (Gender: Female) - .073 (Experience with TB)

The table 5.13 shows the statistical relationship between Marital status: Couple and this perception (P-value .013) with 95% CI. The model shows that if marital status (couple) increases by 1 unit, the log (odds) of (corrected) perception will increase. The Odds Ratio is 2.244 (in comparison to the reference groups).It pointed that people who have a spouse had the right perception that living in the slum will increase the risk of getting TB more than single people.

Table 5.14: The Relationship Between Socio-economic Factors and Self-risk perception about getting TB by touching blood of TB patients

Factors	B	OR	95% CI for OR	P-Value
Age	.018	1.018	.998, 1.039	.076
Education	-.033	.968	.438, 2.135	.935
Income	.001	1.001	.999, 1.002	.386
Divorce	1.178	3.248	1.144, 9.221	.027
Couple	.367	1.444	.779, 2.676	.243
Female	-.531	.588	.347, .996	.048
Experience with TB	-.370	.691	.351, 1.361	.285
Constant	-.064	.938		.917

The model is Corrected knowledge = -.064 + .018 (Age) - .033 (Education) + .001 (Income) + 1.178 (Marital status: Divorce) + .367 (Marital status: Couple) - .531 (Gender: Female) - .370 (Experience with TB)

The table 5.14 shows that there is statistical association between this perception and two factors; divorce and female. The first is Marital status: Divorce (P-value .027) with 95% CI. The model shows that if marital status: divorce increases by 1 unit, the log (odds) of (corrected) perception will increase. The Odds Ratio is 3.248 (in comparison to the reference groups).This means that divorced respondents had more of a wrong perception than people who were single that touching blood of a TB patient would cause them getting.

The second is Gender: Female (P-value .048) with 95% CI. The model shows that if gender: female increases by 1 unit, the log (odds) of (corrected) perception will decrease. The Odds Ratio is .588 (in comparison to the reference group). It showed that female had more concerned (which was wrong perception) than male that touching blood of a TB patient would cause them getting TB.

The Relationship between Socio-economic Factors and perception about TB preventive perception as table 5.15.

Table 5.15: The Relationship Between Socio-economic Factors and perception about TB patients should not live in the community.

Factors	B	OR	95% CI for OR	P-Value
Age	.035	1.036	1.016, 1.056	<.001
Education	.078	1.081	.518, 2.254	.835
Income	.000	1.000	.999, 1.001	.447
Divorce	-.400	.670	.271, 1.658	.386
Couple	-.043	.958	.521, 1.763	.891
Female	-.095	.909	.562, 1.470	.697
Experience with TB	-.138	.871	.450, 1.687	.682
Constant	-1.502	.223		.010

The model is Corrected perception = -1.502 + .035 (Age) + .078 (Education) + .000 (Income) - .400 (Marital status: Divorce) - .043 (Marital status: Couple) - .095 (Gender: Female) - .138 (Experience with TB)

The table shows that there is statistical association between Age and this knowledge (*P-value* <.001) with 95% CI. The model shows that if age increases by 1 unit, the log (odds) of (corrected) perception will increase. The Odds Ratio is 1.036. This means that age is influence to the opinion of respondents. The more respondents had a higher age the more they would perceive that TB patient should not live in community in order to prevent TB transmission.

The Relationship between Socio-economic Factors and attitude Toward TB Patient as table 5.16

Table 5.16: The Relationship between Socio-economic Factors and perception about No Need to Treat TB in PLWHA

Factors	B	OR	95% CI for OR	P-Value
Age	.023	1.023	1.004, 1.043	.018
Education	.224	1.251	.595, 2.630	.555
Income	.001	1.001	1.000, 1.002	.219
Divorce	-.285	.752	.303, 1.864	.538
Couple	.028	1.029	.560, 1.891	.927
Female	-.207	.813	.505, 1.311	.396
Experience with TB	.456	1.578	.819, 3.041	.173
Constant	-1.435	.238		.015

The model is Corrected knowledge = -1.435 + .023 (Age) + .224 (Education) + .001 (Income) - .285 (Marital status: Divorce) + .028 (Marital status: Couple) - .207 (Gender: Female) + .456 (Experience with TB)

The table 5.16 shows that there is statistical association between Age and this knowledge (*P-value* .018) with 95% CI. The model shows that if age increases by 1 unit, the log (odds) of (corrected) knowledge will increase. The Odds Ratio is 1.023. It means that younger people had the right perception more than older people that if PLWHA had TB, they must need to treat TB.

5.3.1.14 The Relationship between Socio-economic Factors and TB Service Perception

Logistic regression analysis found the statistical relationship of the socio-economic factors and the TB service perceptions of sample size as table 5.17 , and table 5.17.

Table 5.17 The Relationship Between Socio-economic Factors and TB service perception about the equal quality of TB medicine of using 30 baht card or social insurance and from big government hospital.

Factors	B	Beta	P-Value
Constant	3.185		.000
Age	1.392×10^{-2}	.141	.016
Education	-.215	-.049	.341
Income	3.741×10^{-4}	.063	.216
Divorce	-.273	-.066	.325
Couple	-7.964×10^{-2}	-.030	.666
Female	3.426×10^{-2}	.013	.815
Experience with TB	-.251	-.064	.213
Holding 30 baht card	.156	.041	.428
Holding Social Health Insurance	-.154	-.039	.452

The model is acceptability = $3.185 + 1.392 \times 10^{-2}$ (Age) -.215 (Education) + 3.741×10^{-4} (Income) - .273 (Marital status: Divorce) - 7.964×10^{-2} (Marital status: Couple) + 3.426×10^{-2} (Gender: Female) - .251 (Experience with TB) + .156 (Holding 30 baht card) - .154 (Holding Social Health Insurance).

The table5.17 shows that there is a statistical association between Age and Acceptability (*P-value* .016) with 95% CI. The model shows that if age increases by 1 unit, the acceptability will increase. It means that older age people had more of a right perception than younger people that the medicine getting from using 30 baht card had equal quality the same as the big government hospital.

Table 5.18: The Relationship Between Socio-economic Factors and TB service perception about the equal efficiency on TB treatment of Health Center and the big government hospital.

Factors	B	Beta	P-Value
Constant	3.059		.000
Age	1.904×10^{-2}	.211	<.001
Education	-.240	-.060	.240
Income	3.806×10^{-4}	.071	.160
Divorce	-5.637×10^{-2}	-.015	.821
Couple	-8.443×10^{-2}	-.034	.609
Female	.242	.098	.066
Experience with TB	-.347	-.097	.055
Holding 30 baht card	6.611×10^{-4}	.000	.997
Holding Social Health Insurance	-3.191×10^{-2}	-.009	.862

The model is Acceptability = $3.059 + 1.904 \times 10^{-2}$ (Age) - .240 (Education) + 3.806×10^{-4} (Income) - 5.637×10^{-2} (Marital status: Divorce) - 8.443×10^{-2} (Marital status: Couple) + .242 (Gender: Female) - .347 (Experience with TB) + 6.611×10^{-4} (Holding 30 baht card) - 3.191×10^{-2} (Holding Social Health Insurance).

The table shows that there is a statistical association between Age and Acceptability (P-value <.001) with 95% CI. The model shows that if age increases by 1 unit, the acceptability will increase. Age associated with acceptability in the efficiency on TB treatment of health center in a positive way.

5.3.1.15 The Relationship Between Socio-economic Factors and TB Training Perception

Logistic regression analysis found the statistical relationship of the socio-economic factors and Participation Perception of the Respondents as table 5.19, table 5.20 and table 5.21

Table 5.19: The Relationship Between Socio-economic Factors and Participation Perception about TB training participation**.**

Factors	B	Beta	P-Value
Constant	3.995		.000
Age	-8.402×10^{-4}	-.011	.842
Education	-.364	-.114	.027
Income	4.700×10^{-4}	.097	.056
Divorce	.141	.046	.484
Couple	.341	.171	.012
Female	.109	.054	.307
Experience with TB	1.883×10^{-2}	.006	.898
Holding 30 baht card	.134	.048	.352
Holding Social Health Insurance	.207	.071	.169

The model is Participation = 3.995 - 8.402×10^{-4} (Age) - .364 (Education) + 4.700×10^{-4} (Income) + .141 (Marital status: Divorce) + .341 (Marital status: Couple) + .109 (Gender: Female) + 1.883×10^{-2} (Experience with TB) + .134 (Holding 30 baht card) + .207 (Holding Social Health Insurance).

The table shows that there is a statistical association between participation and two factors. Education (P-value .027) with 95% CI. The model shows that if education increases by 1 unit, the participation will decrease. It means that people who have a higher education want to participate in this activity less than people who have a lower education.

However, the second factor is marital status: Couple (P-value .012) with 95% CI. The model shows that if marital status: couple increases by 1 unit, the participation will increase. It means that people who have a spouse would like to participate in a TB campaign more than single people do.

Table 5.20: The Relationship Between Socio-economic Factors and Participation Perception about voluntary to be TB care taker.

Factors	B	Beta	P-Value
Constant	3.572		.000
Age	1.437×10^{-3}	.017	.775
Education	-.156	-.041	.431
Income	2.822×10^{-4}	.055	.283
Divorce	.210	.059	.384
Couple	.379	.162	.018
Female	2.431×10^{-2}	.010	.849
Experience with TB	1.372×10^{-2}	.004	.938
Holding 30 baht card	7.876×10^{-2}	.024	.646
Holding Social Health Insurance	9.508×10^{-2}	.028	.595

The model is Participation = $3.572 + 1.437 \times 10^{-3}$ (Age) - .156 (Education) + 2.822×10^{-4} (Income) + .210 (Marital status: Divorce) + .379 (Marital status: Couple) + 2.431×10^{-2} (Gender: Female) + 1.372×10^{-2} (Experience with TB) + 7.876×10^{-2} (Holding 30 baht card) + 9.508×10^{-2} (Holding Social Health Insurance).

The table shows that there is a statistical association between Marital status: Couple and Participation (P-value .018) with 95% CI. The model shows that if Marital status: couple increases by 1 unit, the participation will increase. It shows that people who have spouse are more willing to be a TB volunteer than single people do

Table 5.21: The Relationship between Socio-economic Factors and Participation Perception about promote cured TB patients to be TB campaigner

Factors	B	Beta	P-Value
Constant	4.358		.000
Age	3.964×10^{-3}	.072	.215
Education	2.421×10^{-3}	.001	.985
Income	4.311×10^{-4}	.132	.010
Divorce	3.390×10^{-2}	.015	.825
Couple	2.573×10^{-2}	.017	.801
Female	2.470×10^{-2}	.016	.761
Experience with TB	.154	.070	.169
Holding 30 baht card	-.139	-.066	.203
Holding Social Health Insurance	-2.922×10^{-2}	-.013	.798

The model is Participation = $4.358 + 3.964 \times 10^{-3}$ (Age) + 2.421×10^{-2} (Education) + 4.311×10^{-4} (Income) + 3.390×10^{-2} (Marital status: Divorce) + 2.573×10^{-2} (Marital status: Couple) + 2.470×10^{-2} (Gender: Female) + .154 (Experience with TB) - .139 (Holding 30 baht card) - 2.922×10^{-2} (Holding Social Health Insurance).

The table shows that there is a statistical association between Income and Participation (P-value .010) with 95% CI. The model shows that if income increases by 1 unit, the participation will increase. It means that higher income respondents are more likely to promote cured TB patients to participate in a TB campaign than lower income people.

5.3.2 TB Perception of the Community residents and TB Patients (Qualitative study)

Focus group discussions were conducted 14 times (5 FGD for 40 non-TB groups, 9 FGD for 55 TB patients) .The background information of participants as Table 5.22

Table 5.22: Background information of 14 focus group participants (5 FGD for 40 non-TB groups, 9 FGD for 55 TB patients)

	Non TB groups		**TB groups**			
	Community people		**HIV Positive**		**HIV Negative**	
Information	Male	Female	Male	Female	Male	Female
Recruitment source	Community partnership		PTB		PTB	
Number of Participants	10	30	6 (5 are IDU)	2	33	14
Mean age (years)	27	28	36	40	47	47
Education	2 Primary 3 Junior school 5 High school	18 Primary school 6 Junior school 6 High school	2 Primary School 3 Junior school 1 High school	1 No schooling 1 Primary school	3 No schooling 13 Primary school 11 Junior school 6 High school	2 No schooling 8 Primary school 3 Junior school 1 High school
Occupation	5 Student 2 Community leader 1 CHV	8 Students (jigsaw gr and Ninja gr.)	Unemployed(3) Company	2 Housewife	Unemployed(5) CHV+(1)	6 Unemployed 6 Housewife
	Employer (1 cured TB patient)	5Community leaders 5 Community committee 5 PHV 2 Own employer 2 Housewives 3 NGOs	1 employee 2 Labor		2 District employee 4 Own employer 1 Shopkeeper 20 Labor	1 Own employer 1 Shopkeeper

Remark

IDU= Injecting Drug User

PTB = Pulmonary Tuberculosis (smear positive) case enrolled treatment at BMA health center 41 at the study time.

PHV= Public Health Volunteer

From revising O.P.D. Card found that there are four people who are relapse, cat 2 was applied for 1 female, 1 male, Cat 3 was applied for 1 female, 1 male

Table 5.23: Background information of 10 IDI participants (6 Key informants, 4 TB caretakers)

	6 Key Informants				**4 TB Caregivers**	
	Health center staff		**Community people**			
Information	Male	Female	Male	Female	Male	Female
Recruitment source	BMA health center		Community Partnerships		TB clinic	
Number of Participants	2	1	1	2	1	3
Mean age (years)	50	37	60	57	40	58
Education	Medical Doctor	Bachelor's degree	Primary (1)	Primary(1) Bachelor's degree (1)	Primary (1)	No schooling (1) Primary (2)
Occupation	Government officers	Government officers	Employee (= cured TB) (1)	Housewife (caregiver)(1) NGO (1)	Unemployed (!)	Unemployed (1) Housewife(2)

Table 5.24: Background information of 10 IDI participants (5 cured TB patients, 5 on treatment)

	5 cured TB		**5 patients who are on treatment**				
			I DU and HIV positive	**Alcohol abuse**	**HIV Positive**	**HIV negative**	
Information	Male	Female	Male only	Male only	Male only	Male	Female
Recruitment source	TB clinic (as medical appointment)		TB clinic (2^{nd} relapse)	TB clinic	TB clinic (3^{rd} relapse)	TB clinic (2^{nd} relapse)	
Number of interviewee	2	3	1	1	1	1	1
Mean age (years)	43	56	22	45	34	37	27
Education	Primary (2)	Primary (3)	Primary(1)	Primary(1)	Primary(1)	Primary(1)	junior high school (1)
Occupation	Employee (2)	Housewife (1) Employee (2)	Unemployed (1)	Labourer (1)	Labourer (1)	Labourer (1)	Housewife (1)

Although most of community residents and TB patients were familiar with the term TB, most of them lacked specific knowledge of TB. The Misperceptions still exists in the community. The perception of community residents and TB patients regarding TB are as below.

5.3.2.1 Perceived Image of TB: Cough, Chronic, Contagious, Disgust, Dangerous, Dirty, Poverty (poor people), Prolong treatment, related with AIDS and Drug Abuse.

FGD and in-depth interviewed found that everyone perceived that TB is a chronic cough contagious disease. It is disgusting, dangerous and a serious disease. TB occurred with the poor because of dirty or unhygienic. The danger of TB is a chronic cough. It should be noted that the most serious of TB, as an expression of a female patient, is a disgust *(khwam raiy rang khue khwam rung kiat).* They perceived that TB disease is a disease of social disgust. Nobody wants to contact or be close up to TB patients since they are afraid of getting TB. Furthermore, cured TB requires patient to take medicine long time at least 6 months. Six months is not short for people who live from hand to mouth like them. Moreover, people in a community or social might view or associate people living with TB as/ with AIDS or drug abuse. TB patients indicated that the social's prejudice will increase stigma attached to TB patients.

> *"It is dangerous because it is chronic disease, takes a long time for treatment. Treatment never ends."* female patient, aged 57
>
> *"TB is a contagious disease. It can easily pass to other people ."* male patient, aged 56
>
> *"The society disgust people who have TB"* female patient, aged 27

" It is dangerous and serious. My uncle dead of TB." male patient, aged 42

"People who live in slum have chance to have TB more than other people" female patient, aged 50

"TB is a chronic disease. Take long time to treat." female patient, aged 55

"TB and AIDS come together. If you have TB it means thatyou have AIDS." male community committee, aged 60

"Everyone who saw me they accused me that I am a drug addict because I am thin and tired" female patient, aged 28

Cough: a Unique symptom of TB only?

Most of people, who heard about TB, believed that cough is a dominant symptom of TB disease. Whoever have TB, they must cough and some people still perceived that TB patient must cough with blood (haemoptysis). Since cough is recognized as a unique symptom of TB, thus, people interpreted that with absence of cough is not TB. Most of patients did not aware of TB because they had no TB symptoms as they perceived.

"I heard that people who have TB must have haemoptysis. I did not have it. So, I did not think that I had TB." male patient, aged 59

"I was very tired, very fatigue and lost weight. I could not walk at that time (because of tiredness) just only sat down and did nothing. But I did not cough. I heard that if people have TB, they must cough. It made me did not aware that I might have TB." male patient, aged 50

"I though that I had the menopause. Felling hot and cold might be effect of menopause, thus, I did not go to see a doctor. It took almost two months. I did not cough but lost weigh and lost appetite. Cough just appeared after weight lost." female patient, aged 45

5.3.2.2 Perceived that they have TB: Patients' Reaction

As in-depth interviews and focus group discussions found that perceived severity of TB resulted in many patients being distressed and with anxiety. Having TB made people who live with this disease sufferer because the severity of disease was associated with social stigma and death perception. Women more likely be sensitive than men. Some women cried all night and could not eat anything for weeks. While men could cope with this stress quicker, for a day or a couple of days or a week Those who had obligation, such as small child, or old mother, would more worry than those who were late adult (ageing) and or single. Most of them were aware that this dangerous disease would effect or hurt their family and or anyone who was close to them Dual disease (HIV/TB) plus drug abuse was getting worse for community acceptance since it was doubly unpleasant and unacceptable of the community.

"Doctor told me that I had TB. I was shocked and thought about a Funeral pyre. It is a fatal disease." male patient aged 56

"If I could not be cured, I will take 10-15 tablets tranquillizer to death Peacefully. I do not want to die miserably." male patient aged 60

TB patients perceived that TB patients are often seen as shameful as the disease associated with poor people and dirty behaviors (unseemliness of livelihood such as poor living standard). Some patients do not want to disclose their

TB status because they believe that it will bring shame and stigma upon their family and community.

Be diagnosed as a TB patient resulted in an emotional struggle such as frightened, shock, anger, worry, depression, and frustration. They are afraid of spreading disease to other people. social disgust disease, stigma and discrimination. This affected both male and female feelings of isolation and powerlessness. Cause of anxiety or frustration occurred when patients associated their diseases with negative social perception as one female patient complained “How do I get this disease, how will people look at me?

However, some positive reaction response to TB status is increase their health promotion attention, especially for those who are smokers or an alcohol user. They quit or reduced amount of smoking or alcohol drinking.

> *“I can reduce cigarette smoking from 40 roll of cigarette to less than 10 roll of cigarette” primary school graduated, male TB patient, 48 year-old.*

This stage occurred after they could cope with their TB status and only people who desired cure.

5.3.2.3 Perceived Causes of TB

Most participants had a wrong perception regarding causes of TB. Only few accepted that they did not really know what TB is. These perception are displayed as follows.

Confusing symptoms with confounding factors: Cigarette Smoking , Alcohol abuse, Dust

Most of TB patients, both smoker and non-smoker, drinker or non-drinker, believed that smoking and alcohol drinking were the main cause of TB. While some doubted that dust mite made them have TB.

"It might be because of cigarette smoking and dust that cause me TB." male Public Health Volunteer, aged 42

"I though that I have TB because of cigarette smoking. My friend who is a taxi-driver and another one at my office are heavy smoker. Both of them also have TB." Male TB patient, aged 45.

"I have smoked for eighteen years. I thought that I have TB because of smoking. One more thing is dust because I have a sideline job as a mechanic." male patient, aged 45

"I thought that heavy cough because of heavy smoking. But I wonder that why cough is so chronic and long time around 6 moths. First three, four months, I can speak. Fourth month, cough is increased more and more. Then fifth moth, I am so tired till to lay down. I suffer from chest pain. It causes both physical and mental. Then, my voice disappear." male TB patient, aged 42

Eating and drinking together

Most participants believed that eating and drinking with TB patient will make them have TB.

"Why I have TB, I never eat with anyone who have TB." female TB patient aged 67.

Crowded/Congested community

Living in a congested community can cause TB sickness. They believed that there are a lot of germs inside a congested community and it was the cause of TB disease. For those who work inside community or contact with dust, believed that because of dust or smoke of car.

"I have TB because I live in slum." female patient, aged 53

Because of AIDS

Not only PLWHA but also community residents are aware that PLWHA have a risk to get more than general people.

"I have TB because I have AIDS. I have had AIDS more than 10 years. TB and AIDS will come together if my body is weak, if it is cool or the weather changes" a HIV positive/ TB woman, aged 36

Confusing and mixing between cause of and symptoms of AIDS and TB

Klong Toei community has active NGOs such as DPF, Mercy center which continuous provide HIV/AIDS education to their target group whose reside inside its community. Such activities resulted in high perception and awareness regarding HIV/AIDS and made confusing between cause of and symptoms of HIV/AIDS and TB perception. Many people understood that "TB caused from sexual relationship or injecting drug." Furthermore, they thought that dual disease stay together and had similar symptoms (weight lost, thin)

Neglect or Ignorance

Some community residents blamed people who had TB that they neglected their health.

"People who negleted to take care of themselves will have TB(Kon tee mai do lae tuea eange)" female Community Health Volunteer, aged 50

"People who never take care of their health will easily get (TB) infection TB. (Kon tee mai do lae sukka-bhap ja tid cheua dai ngai) male community leader, aged 55

"Whoever, if not protect themselves will have TB" female community leader, aged 57

Heredity

Patients who have family member or relative or cousin have TB prior to them, will believe that TB is heredity. Community residents also noticed that any family that has a TB patient, later others will develop TB. This study found that one family who lived together with grandmother, daughter and two grandchildren everyone developed TB after grandmother.

"My cousin died of TB. I think I have TB because it is a heredity." male patient, age 42

Do Not Know

Aside from patients who had wrong perception regarding cause of TB, only eight patients accepted that they did not know what exactly made them sick. Most of them were graduated primary school or were illiterate. However, FGD of high school partnership revealed that their perceived knowledge was different from actual knowledge. The obvious evidence of this mention was observed from probing their opinion and pre-test before provide training.

"I never heard about TB before. I do not know TB prior" male TB patient, aged 48

Surprisingly, for those who have TB relapse (second TB active), they did not know that everyone who cures TB have a chance to have TB again. Lack of knowledge result in ignorance and unaware of TB symptoms.

"I did not know that I have a chance to have it (TB) again. Nobody tell me. I thought that TB is curable it means no more TB (no infection and active TB anymore) after cure. If doctor told me (that she has a chance to have it again or never for the rest of her life), I would come early than this." female patient, aged 37

5.3.2.4 Felt Stigmatized / Perceived Social Stigma and Discrimination: Response to Reduce Stigma

Perceived social-stigma, confronted by TB patients, created shame, fear of negative response or rejection, fear of social judgment and blaming including discrimination result in self-stigma and self-isolation. It blocks access to family and social or withdrawal of social activities. Besides, self-stigma is partly caused by fear of spreading disease to other people, fear of related to HIV and Drug abuse, and abandonment by family and friends. TB patients are perceived to be disgusting due to social fears of contagion.

"I go to buy the rice soup. A trade woman do*esn't want me* to *use her bowl* because *she* fear*s to* loose *her* business. *She asked me to bring my own bowl. She told me that she did not mind me but the other people would stop buying her soup. I am O.K. I made my mind to accept this. I used my own bowl" male patient, aged 40*

Wearing Mask: Symbolic of Serious Disease, Symbolic of Stigma

Medical dimension expects people who are suspected of having or knowing to have advance TB wearing a mask to prevent their respiratory secretions from entering the air to prevent airborne transmission. However, social stigma may influence how patients perceive reactions to disclosure of their TB status, thus, they avoid to let anyone notice or suspect that they have TB.

Many patients reported they would feel embarrassed wearing a mask. They believed or expected that other people would have a negative reaction to them if they do such a practice. Self-embarrassment and expectations that others would respond negatively predicted the likelihood of not using mask for TB transmission prevention. Reluctant wear a mask because of the impact of stigma which can involve people's own responses to TB prevention practice (self stigma) as well as their perceptions of others' negative responses (perceived stigma). Patient's disease-prevention intentions and stigmatizing beliefs is associated with wearing a mask.

> *"My sister scolds me that you take it (a mask) off right now. It shames me. Act yourself like normal people." high school graduated female, relapse TB (second time), 27 years.*
>
> *"Everyone will wear mask only here (health center). It will indicate that you must have any kinds of some dangerous diseases if you cover it at home or in public place. People will doubt that we have TB. It obviously discriminate us from general people." High school educated, male TB patient, 33 years.*
>
> *"I do not use a mask because I do not cough or sneeze. If I cough, I will walk to far away from people or go to outside. It looks strange if*

you use it. I would like to make it as natural. Everyone use it when you have common cold, getting on the bus." male patient, aged 28

As above mentioned, wearing a mask will be practiced or not, depends on the appropriate situation or events which is decided by the patient.

Barrier to wearing mask, from patient's perspective, can be summarizing as bellows.

- Wearing a mask makes TB patients different from normal people.
- Wearing a mask is a symbolic of dangerous disease and discriminate practice.
- Wearing a mask means you are disgusting.
- Wearing a mask must be practiced in some certain situation. Since it will make a physician happy or satisfy and make patient as a good patient, thus, a wearing mask will work well only in hospital or health care facility.

Transmission Prevention: Patients' Responsibility; Self-isolation; Self-discrimination; Get Rid of Sputum

Although, family support is the most significant toward patients, there are some patients who did not disclose their TB status to their family because of fear of stigmatization. Although some patients undisclosed their TB status, self-stigma practice was still found in this group. The most self-stigma practices that were found in TB patients are separate eating from spouse or family or friends and isolate themselves to sleep alone.

"My husband does not disgust me. He told me that it is not a matter. I separated myself and separate eating, retrained in actions. I do not

want to eat with him. I am afraid that he might get TB from me." Primary school graduated, female TB patient, 42 years.

"I separated my self to sleep another room. My wife did not tell me to do that but I did it by myself. No need to wait anyone tell me." male patient, aged 45

"I separate everything by myself. I do not want anyone to get my disease. I have my glass and my plate. After I cured TB, I throw them away. I do not want anyone to use them. They might get TB." former cured TB patients, aged 60

For those patients who's fear of stigma, by unintentional spreading TB germs to others and perceived that the public generally fear contagious and avoid contacting TB patient, tended to respond by withdrawing from social activity and interaction. Most patients who had symptom of cough tried to close their mouth whenever they cough. TB disease made them more aware about their activities that might cause others to get infection as an example words of one female patient.

"I do not want anyone come to close up me as I am afraid that they will get my disease. If I cough, I use my hand cover my mouth. Sometime, I go outside." male patient, aged 60

Two male patients moved to another place to prevent their grandchild getting disease. On the other hand, for some patients, moving to new location to avoid disclose TB status.

Patients tried to reduce spreading their TB germs by getting rid of their sputum in their own way. However, unintentional wrong practices were found in those procedures. Patient did not use right way to get rid of infected sputum.

"I keep my secretion in a plastic bag then I throw it into garbage." male patient, aged 56

"*I do not know how to manage with the sputum, nobody suggested me. I know only that I should not spit it in public area. I'll go to the area that nobody stay and nobody see me. I spit it there*." Male cure TB patient aged 60

Keep Secret: Avoid Prejudice

Keeping TB status secret is another way to avoid rejection, abandonment and loss of reputation from the community is why patient fear of telling family members that he has TB? Some patients might fear rejection and discrimination within their home, while others might be afraid of they heavy be burden put on family, may lead them undisclosed TB status to their family members.

"I tell nobody in my family that I have TB. I am afraid. That they might be worry about me. I do not want to be a burden to my family" 68 year-0ld women.

"I do not tell my family that I have TB. It is a contagious disease. Nobody knows that I come here to take medicine every morning. I go out everyday as usually I do. They do not know that I come to take medicine here" 72 year-old man.

It is shameful for individuals and their families to disclose overtly TB status. Women and men do not perceive in the same way in some aspects when they are affected by TB. Women are, particularly still young and single, more likely to worry about her future couple/ marriage.

> *"I do not want anyone know that I have TB. I do not want nurse or anyone visit me at my home. I also do not want to work as TB volunteer. I am still young I could not imagine about my future if someone know that I have TB. Who will marry me?"* Female patient, 20 year-old.

Individual experience

People's perceptions of TB-related stigmatization and discrimination is also affected by direct or indirect experience e.g. used to be TB care taker, know TB patients (who is his/her friends or relative), commonly held beliefs, knowledge and attitude, forms of societal stigmatization and discrimination.

> *"My neighboring had TB. I did not disgust her because I saw her cure TB and similar with us."* Female community committee aged 55

Families respond

Not all family response is positive. In reality, some patients found themselves stigmatized and discriminated against within their family. Stigmatization still remains every where even inside the family.

> *"My wife separate eat with me. And also separate cloth washing. I fell hurt but try to understand that she protected TB. She did not disgust me."* a male TB patient, aged 45.

Responses varied according to the relationship between patients and their family. A patient, who has a good relationship background with their family, will be more easily accepted by their family than those who have a poor relationship. However, the study found that most care takers are woman, particularly those who are mother or wife.

"Though he has a wife, I have to take care of him because he is my son. I have only him. I do not mind that I will get TB from him or not." 67 year-old mother.

"If my family member has TB, I think we can live in the same house because he(or she) is our family member. If we do not let him (or her) live in this house, he has no where to go. I do not know where we can push him." 45 year-old community resident.

5.3.2.5 Perception on TB, HIV/AIDS and Drug User: Dual disease (TB and HIV), Double Misperception related to Drug User creates triple stigma

There were different opinions of respondents between AIDS and TB regarding the seriousness of both diseases.. Some TB patients pointed out that AIDS sickness is more serious than TB sickness because TB can be cured while AIDS has no medical treatment. AIDS is fatal disease and can pass to the next generation. Besides, respondents were confused, their perception regarding the symptoms of AIDS and TB and mode of transmission. Some thought that both diseases have the same rout of transmission; sexual intercourse, sharing needle injecting. Some thought that TB germ of PLWHA is stronger or virulence than TB germs of a patients who has TB only. While, people who were against TB is perceived that it is more dangerous than HIV/AIDS because of its air born transmission and symptoms.

AIDS is incurable, terrible, dreadful disease, but even so people will choose to live the same house with PLWHA more than a TB patient. Why? The community is highly scared by TB and what is/are the reason(s) that TB is more

highly stigmatized than HIV/AIDS by the community? People expressed that they might get TB more easily than HIV/AIDS. Living together with HIV/AIDS is possible to be safe from HIV/AIDS, unlike TB. People perceived that TB creates an awful cough that can easily spread to them by inhalation.

> "*Although, TB is curable, most of people still perceive that it is incurable and fatal disease. If you have TB disease, people will assume that you are drug user or have HIV/AIDS.*" female leader, aged 55

(Social perception is strongly stigmatized in this community as illicit drugs source.) The common physical appearance of PLWHA, IDU and TB patient is so similar such as skinny, thus, it is unsurprisingly that why this can make people confusing.

> "*One TB patient who is so skinny was reported to police. His neighbor suspected that he might be drug user."* female community leader
>
> "*TB is better than AIDS because TB can be cured. AIDS canextend into the next generation."* a female TB patient, aged 50.
>
> "*AIDS is serious than TB because its fatal disease. Everone who have AIDS will have TB because of low immun. But TB patient will have or not have AIDS"* a male TB patient, a ged 42
>
> "*TB is similar to AIDS because the transmisiion is the same way. Getting TB and AIDS because of sexual intercourse, sharing needle. TB patient might have AIDS and AIDS patient might have TB. It spread the same rout.*" a female patient, aged 45

"TB is more serious than AIDS because when you get it, immediately you have it. But AIDS can be live without any symptoms for long time. But the figure of AIDS from media that presented only the ugly picture might make AIDS is more disgusting than TB in public's eye. female Community Health Volunteer, age 45

"*TB is more serious than AIDS since TB has severe cough like almost die. I do not scare AIDS because I do not have multiple partners. I do not wallow in sex."* High school graduated, male TB patient, 33 years

"TB produces productive blood cough. It is horrible. Just inhale or saliva, you will get it. It can spread to other people. You will get it anytime without never acknowledge, never know from anyone. Different from AIDS, if you do not go to find it, you never have it. AIDS (patient) is just skinny and dies without AIDS acknowledgement." Primary school graduated, male TB patient, 48 years.

As above mention**, Factors which contribute to TB-related stigma in the Klong Toei community** can be summarized as follows.

1. The community perceives that TB is a communicable/contagious disease by producing an awful cough.

2. TB is a dangerous and disgusting contagious disease since it is easily an infection-threatening via inhalation. Some people misperceived that it can contracted through eat or drink together, sexual intercourse. TB was related with disease's

severity which was viewed as the nature of the disease or pathogenic disease because of its social construct.

3. The community is afraid of contracting TB due to air born disease

4. The disease is associated with a stereotype of social that TB is a result of poverty or uncleanliness (people who are dirty only). It is a disease of low class people. It still relates with drug addiction and HIV/AIDS that are already stigmatized in the community.

5. The physical appearance of a TB patient produces rather revulsion or disgust (unpleasant, disgusting even).

6. TB is heredity. This misperception results social in fearing to be viewed as inferior or bad breed/race which is different to general people.

7. A TB patient is a source of infection which spread disease to the community or social groups. It is their responsibility for other people.

8. TB disease's association with HIV/AIDS and or Illicit drug use which link to unacceptable behaviors and social punishment (judge by social/public leads to double stigma or triple stigma).

5.4 Health Seeking Behavior of Community residents and TB Patients

According to the household survey it revealed that almost 62% of community respondents chose to buy drugs form drug store if they got cough and fever. 68.9% gave the reason that it was convenient since the drug store was near their homes, 26.9 % pointed out that because of minor illness. While 58.1% would go to hospital because of 30 Baht scheme or social insurance (40.8%) or severe illness (if cough and fever still persisted) (25.2%) as Table 5.25.

Table 5.25: Health seeking behavior of 430 community respondents

Health Seeking behavior of respondents	Male (n=128) n(29.8%)	Female (n=302) n(70.2%)	Total (n=430) n(100%)
What will you do if you get cough and fever?			
Buy drug at drug store			
No	22(34.4)	63(39.6)	85(38.1)
Yes	42(65.6)	96(60.4)	138(61.9)
Total	64(100.0)	159(100.0)	223(100.0)
Go to hospital			
No	26(42.6)	61(41.8)	87(42.0)
Yes	35(57.4)	85(58.2)	120(58.0)
Total	61(100.0)	146(100.0)	207(100.0)
Go to health center			
No	45(75.0)	76(51.7)	121(58.5)
Yes	15(25.0)	71(48.3)	86(41.5)
Total	60(100.0)	147(100.0)	207(100.0)
Go to private clinic			
No	38(61.3)	85(58.6)	123(59.4)
Yes	24(38.7)	60(41.4)	84(40.6)
Total	62(100.0)	145(100.0)	207(100.0)
The reason for visiting drug store			
Convenience (near home)	41(65.1)	92(70.8)	133(68.9)
Minor illness	19(30.2)	33(25.4)	52(26.9)
Other (cheap)	3(4.7)	5(3.8)	8(4.2)
Total	63(100.0)	130(100.0)	193(100.0)
The reason to go to hospital			
30 baht or social insurance	19(37.3)	46(42.6)	65(40.8)
Severe illness	12(23.5)	28(25.9)	40(25.2)
Convenience (near home)	9(17.6)	15(13.9)	24(15.1)
Others (physician, good quality)	11(21.6)	19(17.6)	30(18.9)
Total	51(100.0)	108(100.0)	159(100.0)
The reason go to health center			
30 baht card	5(33.3)	27(40.3)	32(39.0)
Convenience (Near home)	6(40.0)	25(37.3)	31(37.8)
Good service/ cheap	4(26.7)	15(22.4)	19(33.2)
Total	15(100.0)	67(100.0)	82(100.0)
The reason go to clinic			
Convenience (near home)	15(75.0)	42(76.4)	57(76.0)
Others	5(25.0)	13(23.6)	18(24.0)
Total	20(100.0)	55(100.0)	75(100.0)

According to the in- depth interview and focus group discussion of cured TB patients and TB patients, found that if they had cough and or fever they preferred to

buy the medicine from a drug store or from a grocery near their home since it was convenient in spite of having goad card as one patients informed that;

> *"Actually general people will not got to see a doctor if their illness is not so serious. They will not pay attention (their symptoms if they have minor illness). They will wait until serious such as cough until chest pain."* High school graduated, female TB patient, 27 years.

Cough and fever was commonly viewed as a common cold which was a minor illness. Their believe was confirmed by drug seller when they initially went direct to buy drug from drug store near their home. They did not want to spend time at a clinic or health center or hospital. They would go back to drug store to get anti-cough and or antibiotic for common cold again if their symptoms still persisted. This stage might vary from 2 weeks to a month. Only after symptoms persist for some time and/or the suspect's serious health problem, are health services consulted. A private clinic inside their community which was selected as their rights under 3o Baht scheme would be the next option. Few patients went to visite private clinic (that they paid with their own money) because it provided faster and more convenient services than others. This stage took around a month to months. Seeking care at a hospital would be considered if treatment of private clinic could not cure their symptoms. Finally , BMA health center 41 was their destination for TB treatment. Diagram 5.4.1 shows the health seeking behavior of TB patients.

Content analysis revealed that some female and elderly patients were perceived to be more reluctant to seek health care and to seek care for cough from health facilities rather than male patients. Since those female and elderly patients' financial depend on their husband or their child, including burden of housework duty.

It should be noticed that for those who are the main financial support of family tend to be early seeking care. Sickness means that they might lose daily income, thus, they desire to be early and immediately cure illness. A male patient told that "*I could not sick for long time, otherwise my family have nothing to eat."*

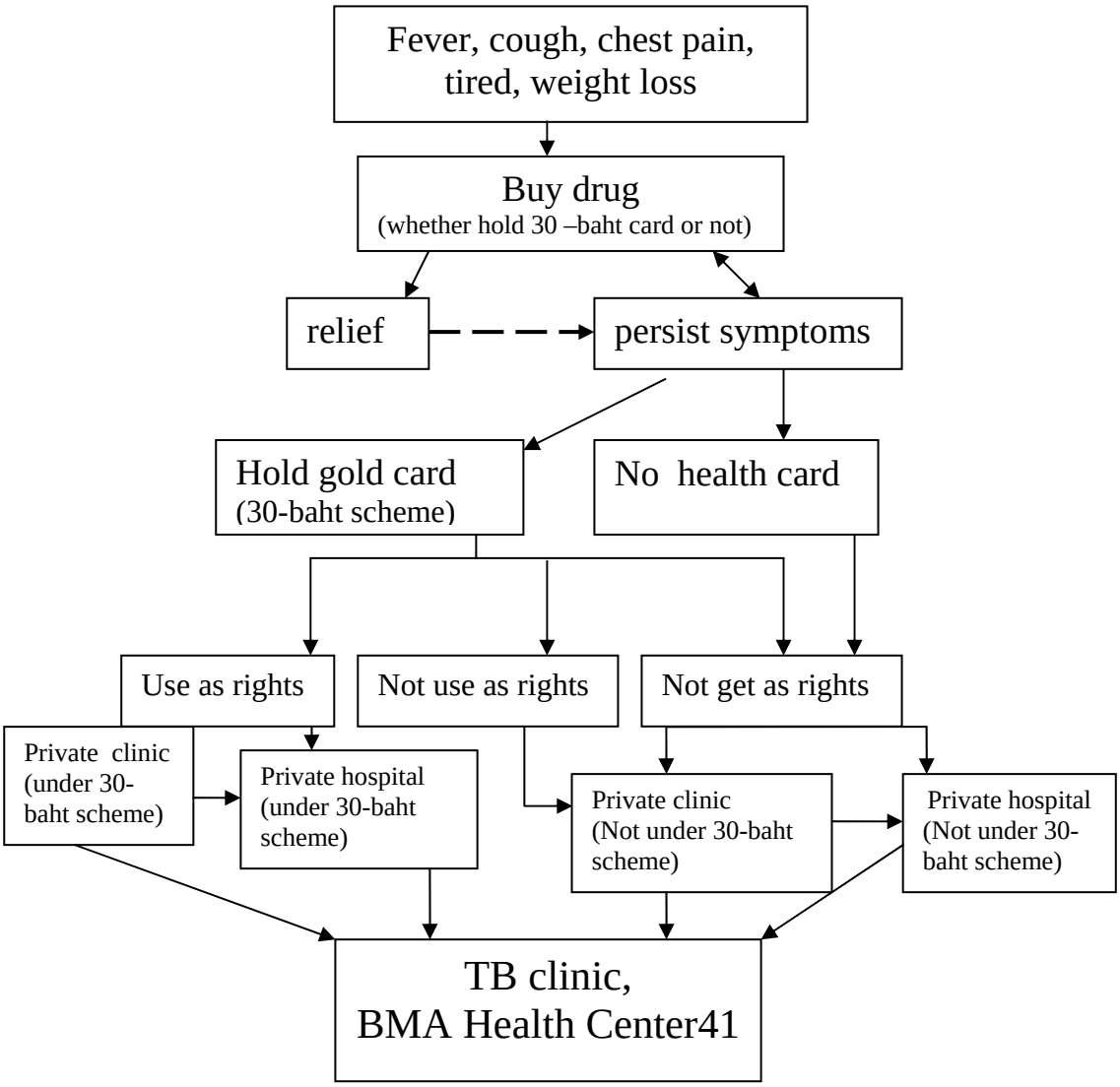


Figure 5.1: Health Seeking Behavior of TB patient and critical point of treatment delay

5.5 The determinants of accessibility of the TB services

Accessibility and utilization of health service

As mentioned earlier, most of community respondents and TB patients preferred to buy drug from drugs store because of more accessible in term of convenience/ available time, short time, cheap price, Since their symptoms were assumed that it is a minor illness.

For a private clinic or hospital will be next services utilization, because it was perceived that was more convenient than public services in term of waiting time, available services time, travel, and believed in physician capability.

Accessibility, Utilization: Travel factors

Access to a health facility by various methods and ways, short travel times are all contributed to access to care. BMA HC 41 is, located near the main road, there are various kinds of transportation whit short distances to travel from home to health center. Patient, spending 10-20 minute to get to their medical, are relying on their feet, their own motorcycle or private motorcycle the closure of health centers

"*I come here by motorcycle. It took around 10 minute only."* male patient, aged 42

Although, transportation might be available, some patients who rely on public transportation may find the services not to be convenient, or they would be affected by fare for those who are daily paid workers or unemployed.

Accessibility, Utilization: Waiting Time

The waiting time to get the services is another influential factor for accessibility. With good management of the TB clinic, BMA health center 41, could meet the needs of patients since they spent around 10-30 minutes only. In fact, for

those who came to take medicine, would immediately get the service, it took around 10 minutes only. In case of seeing a physician, waiting time a bit longer. However, it took not more than 30 minutes for schedule appointments. Patients were also satisfied with queue management for seeing a physician.

> *"Not long. If I do not meet a doctor, I spend 10 minute to get medicine. If I have to see a doctor, I wait not more than 30 minutes."* male patient, aged 45

Affordability, Utilization: Health Insurance

Health insurance coverage is an important determinant of access to TB services. Access to care is important for early detection, prompt treatment in order to limit chances of transmitting infection. Fortunately, Thailand has introduced a universal health insurance scheme that will provide access to an essential package of care to all Thai citizens. Since the package includes TB treatment, TB patients are assured of having free access to care.

Although, TB treatment can access through 30 baht-scheme, TB clinic of BMA health center provides free services. Further more, its services still cover to both Thai and non-Thai citizens.

The 30-Baht Scheme: Access to TB treatment?

Although the 30-Baht scheme has an important factor to increase accessibility to TB treatment, at the same time, its condition can increase an obstacle to access to care such a case below.

> *"I went to see a doctor at Chachoengsao province, I had to pay for TB treatment since my gold card (the 30-baht scheme) could only use at Gluaynumthai clinic in Bangkok. Thus, he (health care provider) referred me to Bangkok. I went there and a clinic staff told that I could not use a gold card*

because I have a Social security scheme card (compulsory scheme for formal sector). I informed him that I already resigned. He suggested that I have to show the resigned letter certificate to request a new gold card at the National Social Health Insurance. He told that it might take a month. I can not wait since I need medication and injection. Thus, I went to TB cluster (MoPH) because I was cured treatment there for my first TB illness." Female patient, aged 34

"I am worry about the extra expenditure that might be raised from use 30 baht card. My experience thought me that I had to pay 200 baht for cholesterol checking. How about TB? How much I have to pay for treatment.?" female community residents, aged44

Availability: Services

TB clinic of BMA health center will provide daily TB medication service (DOT) on Monday to Friday during office hours. TB patients will come to take TB medicine at the TB clinic in the morning on those days. There is only one part-time physician who will come to provide a half day services on Tuesday and Thursday only. Most patients must adhere on health center DOT, only few patients have chance under home based DOT. There is only one nurse to do many things by herself. Home visit is also the responsibility of TB nurse.

TB services of health center is based on a health facility based center that might not meet the need of patients in terms of service time available. More over, limitation of manpower (there is only one TB nurse and one physician.) we also well recognize that might an effect to effective TB control programme such as provide counseling which needs time and confidentiality.

"My working time and health center(service)time is not match. If I can take medicine for a week, it will be good for me. If I knew in advance that I have certain job for certain day, I will request medicine in advance. But sometime it is urgent job and I have to do, otherwise my family have nothing to eat. I can not stop working because everyone waiting me.I have two children to responsibility . I also have to pay for renting house cost. " male patient, aged 42

"Severe symptoms made me almost impossible to come here. I was very tired, almost could not walk, almost fainting. It is suffering but I had to come for medication. If possible for the initial phase, doctor or nurse) should go to provide medicine to patient at home." female patient, aged 55

"My career is laborer daily paid. Getting paid 150 baht per day. I would like have to go out to wait the job since 7 o'clock. Working time is uncertain. Sometime, I have to leave home before 5 o'clock, early morning to wait for job. I would like to get the medicine for a month. Coming here (health center41) everyday is a burden for me. I have to pay for traveling. Oh! Roundtrip! 60 baht is too expensive for me. I am too tired to go by minibus." male patient, aged 46

Acceptability (satisfactory)

Not only care providers, but also cleaning staff were highly accepted and appreciated by patients from cure TB and on treatment patients, Friendly services, good two way communication and general concerning to patients make this clinic prominent. Further more, Content analysis found perceptions that financial difficulties in term of loss of income influenced adherence of TB patients, especially for those who are paid daily. Thus, it is difficult for them to manage time for medication

"Doctor and nurse are good heart. Good talking. And treat (TB disease*) without charge. I will come till my disease is cure."* Female patient, 22 years

"This center is better than any where else that I used to use service.

Here has a good doctor and nurse. They are so kind and worry about their patients. If patient did not come to take medicine, a nurse will go to follow up that patient." Female cured TB treatment, 59 years

"Good because the treatment is free. Provide friendly service. Doctor and nurse are also good with us. I came here with sickness and unhappiness but good services made me got well." High school graduated, male TB patient, 33 years

Satisfaction, Utilization: Quality of Treatment

The quality of 30 bah t is a critical issue that was raised by respondents who never use the public service.

"*I am not confident in 30 baht quality. I thought that if we use this card, we will get poor quality of medicine*". Male community member, aged 43

Furthermore the perception in general of people regarding TB treatment in a special hospital or big hospital have equality more than clinic or a small hospital.

"If I have TB,I want to treat at special hospital. I believed that I will be safe there. It is more specific and doctor must have quality than clinic. Health center can treat minor illness only." female community member, aged 40

Although, patients preferred to use private services more than public services, in term of TB, many TB patients complained after they got poor qualify treatment. They felt unsatisfactory with private services because it could not cure their disease.

"*Three weeks ago, I have chest pain, fever, dry cough, body pain, bone pain , then I went to* (private*) clinic near my home. Doctor injected and gave me some medicines for taking two weeks. It could not relief my symptoms, I went to see him* (a doctor) *again. He gave me medicine for one week. I took those medicine but it could not cure, then, I decided to come here* (BMA HC 41)". A primary school graduated, male TB patient , 48 years

"*I wasted time with (private) clinic (that under 30 Baht scheme) almost three months. I went to clinic first, doctor gave me only anti-pain, anti-cough. He told me that I had common coal. More than two monts, I lost time here. Then, he referred me to hospital (the network of 3o-baht scheme). Health staff scolded me that why you come here, cough only 3 months, why you hurry to come, why you do not wait till year to come. And again, doctor do noting for me. Just give me anti-biotic. I decided to better come here."* male patient, aged 57.

"*Earlier, I chose……clinic* private clinic under 30 baht scheme). *Now , I would like to change from that clinic to be health center 41. Here* (health center 41) *is much better than I thought.*" male patient, aged 50

Social Support: Met the Clients' Need

Social support is another factor that will motivate patient compliance and the taking of prescribed medicines. There are many forms of social support that can be provided to patients, these are emotional support, instrument support, and information support. Social support means the concerning or worrying to patient. Actually, family is the most important source of support. TB patients reported that their families were the primary caregivers and main source of support to them. This was in a clear evidence of the importance of the role that the family played in providing support and

care for TB patient. If their families do not stigmatize and do not discriminate against them, they do not want anything else from anyone. However, for those who have been sick for long time without income might need some support from other people who can support.

> *"I am sick and can not work because I am too tired to work. Everyday, I am dependent on money's wife. She must do the OT (over time) work then she will get 200 baht per day. She gave me 300 baht per week. I also got a travel fare 15 baht from a doctor"* Male patient aged 45

Some patients mentioned that they got various kind of support from health center such as transportation fare, supplementary food (milk), information (advice, suggestions, and information), listening, and especially wording of health providers that encouraged them to continue treatment. Emotional support is a critical factor that involves the provision of empathy, trust and care. Power of emotional support is greater than anything since it shows your understanding, especially it shows that patient is not disgusting.

> *"I can overcome my crisis because my wife give me warm support. She never shows any offensive verbal. We ate food together (by using a serving spoon)"*. male patient, aged 33

> *"My office offers me to body check up as yearly welfare. When I acknowledge that I have TB, I inform them, they told me that do not be afraid, and this disease can be cured. It is not dangerous. It made me feel better and happy since it looks like normal disease because everyone knows that it is curable. Fearing that I could not stay in society when social told that it is normal, this made me*

confident that I can stay with them." primary school graduated, male TB patients, 37 years.

Surprising, we found that most of them did not need anything in form of in cash or in kind from their friend in their communities, just only mental support from people surrounding or not disgust them.

"We do not need anything from them because we have the same status; we are the same poor people. Nobody can help each other. They have nothing to give us but we need just only their understanding and encouragement " (kao jai lae hai kamlang jai). primary school graduated, female TB patient, 42 years.

"I do not want anything. My family understands and takes care of me very well." high school graduated, male TB patient, 33 years.

"*First time, I have no money for transportation because I did not work more than one month. No have money to give my grandchild to school. Current, doctor gives me ten baht for travel."* female patient, aged 70

PHASE III. DEVELOP TB CONTROL PROGRAM

5.6 The Intervention to Improve TB control

5.6.1 Planning Process

As this study is a participatory approach, thus, after the result was analyzed the three days workshop for partnership was held to evaluate and create an action plan. Various methods were introduced in this workshop under participatory principle such as group opinion, group work through discussion.

In the final evaluation of the meeting, participants pointed that the workshop had provided a useful overview of the issues and offered a good starting point for

them to develop a more flexible and appropriate Plans of Action for their community. It was recommended that a similar workshop should be held each year to revise the action plan.

The workshop was begun with mutual agreement (or ground rule) on how to work together. The workshop's objectives were reviewed again. Then, "project planning" training was introduced to participants and practice it. The results of qualitative and quantitative study were presented to participants in order to comments and suggestions. Follow by reviewing the TB mission and TB vision which were developed by them since earlier (phase I). Before the participants were separated into 3 groups to develop action plan as priority selected problems. All participants were aware that to eliminate TB from their community, it might take long time and needed more partnership (to extent the network). For the first time working, it should be also considered the feasibility within their strength and limitation, not only problem's priority. Thus, discussion analysis about their strength and limitation (weakness) were clarified by themselves as below.

Strengths of participants were as following.

1. Willing to participate and work for their community (ownership).
2. Compassionate and sameness feeling toward community residents (the sameness feeling, problem orientated)
3. No gap with community residents
4. Know community residents well.(know who are doing what, when and where)
5. Familiar with community's geographical including general problems of their community

Limitations of participants were as following.

1. Not enough TB knowledge resulted in lack of confident to provide service.
2. Not enough some special skill such as training, communication.
3. Need to learn more some special technique such as how to manage the system (follow up patient), how to record and report
4. Everyone had various positions, various roles and responsibilities (Time limitation)

Then, the mutual agreement (how to work together) was reminded to them again before start planning. Giving enough time for them to do it and every group had mentor for process facilitation. It spent more than half day to finish this activity (TB control program planning). Then, each group presented their results to all participants to get the comments, ideas, and suggestion. Finally, the results of each group were reconsidered and integrated together as group agreement. The workshop ended with the presentation of the action plan to be implement within three years after getting the fund.

5.6.2 Detail of TB control Plan

Project title: "Power of Community in TB control"

Community's vision: "Knowledgeable community has compassion, secure in dwelling, free from narcotic and disease, generous and warm family, solidarity for quality of life."

TB Vision: "Community has knowledgeable awareness to protect themselves from TB"

TB mission: "Community has TB counseling to provide counseling, treatment, and support community residents. Community Health/TB Volunteers do home visit to provide suggestion and refer to appropriate organization. Community accepts,

encourage and promote patient or former TB patients who are declaring cured to participate in TB activities."

Target areas: 14 sub-communities inside Klong Toei community, namely 70 Rai , Wat Klong Toei nai3, Pattanamai, Romgloa, Lock 1-2-3, lock5-6-7, Hua koeng, Roeng moo,Ban gluay, Sabmanothia, Ruamjaisamakke,, Suan ooy, Rimthang rodfai and Naphasub

Duration: Three years after funding

Goal: To reduce TB transmission inside Klong Toei community

Objective:

1. Partnership development and retain (community, public, private).
2. Human resource development
3. Support TB patients during the course of TB treatment to improve adherence to TB treatment
4. Community awareness raising
5. Increase Early passive case diagnosis and treatment
6. Monitoring and Evaluation (ME) activities

Target groups:

1. TB patients, caregivers
2. Risk group (PLWHA, IDU, CSW)
3. Community member (Housewife, youth group, elderly group)

Responsible Organization: DPF will implement with Partnership (CCTB) and network (public health, profit private, non-profit private)

Method: Proactive problem solving, networking concept, community participation

Table 5.26 TB Control Plan “Power of the Community Network in TB Control”

Objectives	Activities	Indicator	Sources for verification
Partnership development and retain (community, public, private).	- Engage all care providers Public-Private Mix approaches (NGOs/GO/Private approach) through meeting	-# of meeting	-Report
	-Workshop for systematic management agreement on TB working	- MOU or planning	-Report
	-Conduct monthly and quarterly meetings of volunteer and partnership	-Flow chart -# of meeting	-Report
Human resource development	- Develop Training curriculum (TB, Care and support, Communication, system management)	# of curriculum	-Training curriculum
	-TB knowledge Training for 1.administrator (NGO,CBO, Leader, relevant agencies) and 2. TB volunteer (Community Health Volunteer or cured TB patients to be Community TB Volunteer, health educator, peer support group)	# of trainings /participants	-Record/ report
	-TB communication skill training	# of trainings /participants	-Record/ report
	-Peer support group training	# of trainings /participants	-Record/ report
	- System management training (systemic follow-up, coordinate and cooperate with related agencies, record and report writing)		
Support TB patients during the course of TB treatment to promote adherence to TB treatment	-Establish peer support group	-#of peer support group	-Report
	- Peer support groups to provide TB/HIV counseling, and education	-Education curriculum	-Record/ report
	- Community -based DOT	# of clients	-Record/ report
	- Home visit	# of clients	
	- Care and support both mental, in kind or in cash support(food, supplementary, others) by cooperate among network	# of clients # of clients	-Record/ report -Record/ report
Community awareness raising (promote the right knowledge, attitude and practice on TB and stigma reduction)	-Conduct TB education community campaign on TB/HIV prevention and care	# of campaign	-Record/ report
	- Broadcast communication on TB via community radio	# of broadcast	-Record/ report
	-Integrated TB education to other events of community	# of integration	-Record/ report
Increase Early passive case diagnosis and treatment	-Establish TB counseling service inside sub-health center community to provide TB counseling	# Of TB counseling unit # of clients	-Record/ report -Record/ report
	-Establish referral networks for TB symptomatic and new smear-positive TB.	# Of relevant agencies	-Report
	- HIV collaborative activities: Prevention of HIV in TB patients and vice versa to provide counseling, training and refer	# of project (TB, HIV) # of clients	-Record/ report -Record/ report
	-Cough surveillance in PLWHA, alcohol abuse, IDU, sex worker and refer to health center	-#of case referring	-Record/ report

TB Control Plan (continue) “Power of the Community Network in TB Control”

Objectives	Activities	Indicator	Sources for verification
Monitoring and Evaluation (ME) activities	- Yearly planner for monitoring and evaluation - Partnership meeting for monitoring and Evaluation	# monitoring + evaluation plan # of meeting	-ME Plan -Record/ report

5.6.3 Budget

Table 5.27 Budget

Description	Year1 THB	Year2 THB	Year3 THB
Human Resources			
Program Coordinator	300,000	315,000	330,750
Program Assistant	180,000	189,000	198,450
Subtotal Human Resource	**480,000**	**504,000**	**529,200**
Infrastructure/Equipment for Network			
Computer set for IT development/maintenance	50,000	10,000	10,000
Office equipment/supplies	20,000	20,000	20,000
Vehicle operation/maintenance (as needed)	60,000	60,000	60,000
Office rent, utilities and maintenance	96,000	96,000	96,000
Subtotal Administrative cost	**226,000**	**186,000**	**186,000**
Activities			
Technical Consultant (Fee, incl. travel and per diem)	140,000	140,000	140,000
Network (partnership) meeting (travel per diem and hotel)	100,000	100,000	100,000
25,000 x 4	300,000	300,000	300,000
Volunteer monthly meeting 25,000 x12	30,000	30,000	30,000
Develop training curriculum			
TB training for administrative staff and volunteer	600,000	600,000	600,000
100,000 x 6	50,000	50,000	50,000
Support TB patients	35,000	35,000	35,000
Network workshop	85,000	85,000	85,000
Media and Public communication	100,000	100,000	100,000
IEC/Publications/Documentation	490,000	490,000	490,000
TB Campaign 35,000 x 14 sub-community			
Cough surveillance and referral system	280,000	280,000	280,000
20,000 x 14 sub-community			
Subtotal Training, Workshop and Campaign	**2,210,000**	**2,210,000**	**2,210,000**
Monitoring and Evaluation			
Monitoring team support and follow up	20,000	20,000	20,000
Project less learned and evaluation	20,000	20,000	20,000
Reporting	15,000	15,000	15,000
Subtotal Monitoring and Evaluation	**55,000**	**55,000**	**55,000**
Finance and administration	60,000	60,000	60,000
Subtotal Finance and administration	**60,000**	**60,000**	**60,000**
Total budget	3,031,000	3,015,000	3,040,200

5.6.4 Work plan

Table 5.28 Work plan

Activity	Total/ year	Year1				Year2				Year3			
		q1	q2	q3	q4	q1	q2	q3	q4	q1	q2	q3	q4
Network (partnership) meeting	4	x	x	x	x	x	x	x	x	x	x	x	x
Volunteer monthly meeting	12	----------											
Develop training curriculum	1	x											
TB training for administrative staff	1		x										
TB training for training for volunteer	6		x	x	x	x	x	x	x	x	x	x	x
Support TB patients	All	----------											
Network workshop	1	x				x				x			
Media and Public communication	1			x			x				x		
IEC/Publications/Documentation	1			x			x				x		
TB Campaign	14		x	x	x	x	x	x	x	x	x	x	
Cough surveillance &referral system	All	----------											
Monitoring team support& follow up	3		x	x	x		x	x	x		x	x	x
Project less learned and evaluation	1					x				x			x
Reporting	3		x	x	x		x	x	x		x	x	x

CHAPTER VI

DISCUSSION AND RECOMMENDATIONS

6.1 Introduction

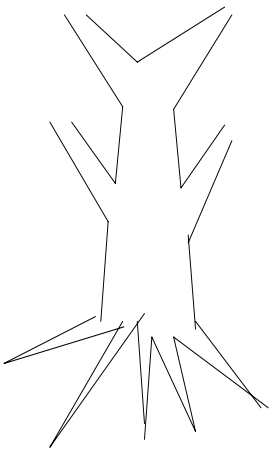
This study focused on community residents and TB patients who enrolled TB treatment at BMA HC 41 of Klong Toei largest urban slum in Bangkok. The main purposes of this study were to develop a community partnership to participate in this study. To describe the nature and extent of existing health services, to describe health seeking behavior of community residents and TB patients, to explore general TB perception of community residents and relationship of socio-economic factors with those perceptions to determine TB service needs and the utilization of TB services, in terms of geographic accessibility, availability, affordability and acceptability, of the community residents and TB patients To develop an action plan to improve the effectiveness of a TB control program, through community participation. Qualitative and quantitative approach was used for data collecting. Partnership was developed to participate in study process. The findings were used as input for the development of an intervention program to improve TB control programme for Klong Toei community. This study was conducted with the expectation that the outcome could be useful to contribute to the BMA policy, responsible local government authorities and NGOs or CBOs working in Klong Toei community including community partnership related to information regarding how best to improve the TB control program in the Klong Toei community, The discussion returns to the research questions, to explain how the study results provide answers to the research questions. The relationships between the results of this study are compared to other related studies and reports.

The scope and limitations of this study, conclusions and recommendations are also described.

6.2 Discussion of Findings

6.2.1 Partnership development and participation: Challenge and Opportunity

Since this study was carried out jointly with various agencies, much more input was required to prepare before implementation. The first phase consisted of baseline studied in term of reviewing literature, and related documents, identifying community which will be studied, identifying local NGOs or CBOs for further collaboration and being the entry point to community engagement, identifying main health facilities that provide TB services, The study found that communities would participate and carried out a project when they were aware that their communities still had TB problems and TB problems were close to them and will effect their families including their communities. Raising awareness is the first important step that leads to personnel concern. Awareness, that a TB problem inside their communities belonged to them, would motivate them to desire to solve the problem. Participatory technique that employed learning through group process (group discussion and group work), by using problem tree analysis, could pull and enhance communities' capacity to identify TB problems and the consequences of TB problems. Communities had a chance to learn how to use systematic thinking to analyze the problems.



Branch means consequences of TB problems

Trunk means selected problems

Root means cause of TB problems

Figure 6.1: Problem tree analysis

Furthermore, trust was also one of the significant factors which motivate them to decide to work with researcher. Although a researcher has been familiar with this community for more than ten years, the researcher is still a stranger to them because she is an outsider. Thus, the AIDS Prevention and Control Project of the DPF (started in 1987) are considered as an insider who they trust and was viewed as a noble friend. DPF was not only an entry point to engage intention of the community but also a prime mover that generated other prime movers. It should be noted that working with the existing agency that are accepted by the community is better than establishing a new one, since it can be an important link in the community. Remember that do not throw the obligation to be the burden of local agency but researcher must gives regular support and facilitate them. Then the next step is dealing with their attitudes and individual perceptions of TB. Sharing experiences and group discussion led to accept different opinions and more understanding what problems TB patients face. Community surveys needed a mentor to closely supervise and make suggestion to novice research assistant. The representatives from youth groups and NGO were the most active partnership in terms of regular meetings, while the representatives of

adult groups had a constraint on time, particularly for those who take on the daily duties or earning for living. For the representatives from NGO, this project was related with their current work and they would like to learn new knowledge and research techniques which was the same as the youth representatives. The youth might be a bit different from NGO, as the observation found that not only desired to learn the new knowledge but also used their free time to earn the money during school break for semester. Although working with youth and adult representatives sometimes faced conflicts of communication and different norm among those two groups because of gap of age, these minor problems could be overcome by referred to the mutual agreement which was established by them, and regular clarity in communication. In addition, working with different people who had different ideas or opinions is a reality in actual life. Furthermore, it increased more discussion and various opinions would shape the attitude and learnt to know others views.

Participatory technique requires a skilled facilitator to facilitate and assistant to assist during implementation. The facilitator must have a good understanding and knowledge both dimensions of medical and social view. Background of community or general descriptions of the community especially believe, culture/ norm and people. Good teamwork is also necessary for success meeting, training and workshops. Increased involvement of partnership by dividing role and responsibility to people in each activity was another technique to retain a partnership.

Another great challenge to maintain a partnership is a close up of collaboration and coordination between various representatives from various sectors. Since the two-ways communication is the principle of participatory technique (Downie, Tannahill, &Rosenberg, 1996), thus, numerous communication methods

were adapted to partnership in order to increase participation and relationship including give them as significant members. Those methods are as follows; (1) making meeting, training or workshop appointment as partnership available in advance, (2) telephone to remind them before appointment dates, (3) reports or agreements must be distributed to everyone every time, (4) agreement must be consensus. A mutual agreement that was established by partnership since the beginning to develop a partnership is working well and can increase participation from everyone under their ground rules. Furthermore, small group method was help to enhance participants enjoyed participation and developed participants' problem-solving and decision-making skilled (Downie, Tannahill, &Rosenberg, 1996).

However, in reality, everyone has a priority for their own agenda, particularly, those who are busy to earn from hand to mouth like community residents. This study gave a lesson learnt that regular participation is impossible for them since it means they will lose their daily income. Volunteer concept is just an idea or is difficult or almost impossible for people who still struggle with fundamental problems in the urban city. Even paid for transportations, sometime, it is still difficult for those who have their own business to close their shops or stop their business for regular meetings. For effectiveness of community mobilization, it might need to be reconsidered regarding how to sustain the community participation. The study of Kironde and Klaasen (2002) in the Northern Cape province, South Africa found attrition rates among lay volunteers to be high (22% had dropped out of the program within one year of joining); 75% of the dropouts gave loss of interest and a desire for paid work as the reasons for leaving the TB program. In the absence of monetary incentives, attrition rates of lay volunteers may be high and this can threaten the

effectiveness of community-based TB programs. In resource-limited settings, it is important to identify and implement appropriate alternative incentives that could motivate lay persons in order to sustain community participation in high TB burden areas

Although there are some difficulties of community participation such as visibility for diverse and divided opinions which are natural to various group representative; difficulty and time involved in working with large groups to reach consensus, scheduling meetings, early involvement of community representatives provided an valuable input into study design, study procedures, access to target groups and feedback. Furthermore, participatory approach could increase capacity and responsibility of local people by providing training as their need and improving community “ownership” of the problem as well as the solution. Community participation might mainly more require a decision making of partnership than regular participate in meetings. Working with community needs to be flexible and well plan especially the timeframe since the community have their own agenda and other activities for their community. Participatory research strategy need to respect the cultural and values of local people to get more weight being attached to recommendations that appropriate with community norms and are acceptable to the community.

A partnership workshop was hold to digest/analyze the findings, and the feasibility and appropriate of the intervention or strategies for TB control in their community were identified. It was observed that the partnerships differed in knowledge and experiences in planning development. However, the three years plan for their community was drafted within their participation.

6.2.2 The nature and extent of existing TB services

The existing TB services are divided into 2 types; public and private sector (clinic, hospital and NGOs). TB services are also divided into two types; medical and social. Medical dimension aims to cure patient under health center-based DOTS strategy which applied passive case-finding approach for TB detection. TB services of BMA health center also based on passive case finding controlling adherence using health center DOTS, passive tracing contacts, home visit, supportive transportation, and refreshment. Social dimension aims to increase TB knowledge for community residents that were implemented by DPF. Since TB education trainings were inconsistency conducted for housewife groups without evaluation, the effectiveness and impact of education is questionable. Education will help to facilitate people to early visit to clinic/ hospital or not, it is still being doubted. While health care providers provide passive case-finding which means just await TB patients to see them at their clinics or hospitals. Since the study revealed that patients did not recognize TB symptoms, thus, physicians might wait without hope. Even, they visited physicians; physicians more likely not had enough skill to diagnose TB disease. Allow the opportunity of initial treatment belonged to drug stores (with or without pharmacists) or even grocery shops because of more accessible (nearby home, cheap price, availability and felt convenience) and patients' perceived minor illness.

In case of Klong Toei, as the patients complained, physicians (of profit private clinics or hospitals) and patients were more likely to be the same capacity in diagnose. Both of them mainly viewed cough and fever symptoms as common cold only, even though, patients reported that they cough more than three weeks. This evidence is similar the study of Sadiq and Muynck (2001) found that delay is more on

part of health care providers than on patients. Proper implementation of guidelines of TB program with public-private sector collaboration and continuing education of health care providers is necessary. Besides, the previous cured TB are not able to predict TB early seek diagnosis due to lack of recognition on TB symptoms, thus, the health care providers has significant role in education communication to patients to recognize TB symptoms and early seeking care. Since reducing the transmission of Mycobacterium tuberculosis depends crucial on prompt diagnosis and treatment, and every effort is necessary to reduce diagnosis delay (Jaramillo, 1998).

Jittimanee et al. (1999) suggested that the good message through communication education would raise awareness for patients or people who at high TB risk. Good message also make them aware about their relevant with TB and early seeking health care service. However, provide education needs to well sensitive with background of participants.

Education should be integrated with other community's problems which are concerned of community people such as dwelling, poverty, unclean environment, narcotic drug problem in Klong Toei community. This was confirmed by the opinion of the Director of BMA HC 41 as follows.

"*We need to explore the TB knowledge prevention of community people in order to getting the TB treatment cooperation from them.*" However, " *It is more easily to increase TB awareness among Community Health Volunteers. But it takes time if we need community people aware about TB problem. TB problem will make us tiring because of their education and their interested.*"

As above mentioned, several types of health services were provided for community residents in the Klong Toei community. However, the findings of this

study revealed that there were gaps, fragmentation, and redundancy among those services. TB services providers were high independent and had little knowledge about the work of other organizations that worked in the community, displaying service redundancy and poor service coordination. BMA health center should take initiative to coordinate to work closely with other agencies to identify persons who have clinically active TB and contact investigation in order to ensure the prompt treatment, adherence, and completion of treatment. Improved coordination is needed to reduce redundant activities.

6.2.3 TB Perception of the Community residents and TB patients

Role of Perception: delay in treatment, stigmatization

The finding revealed that people who not perceived that TB was dangerous/serious disease gave the reason that it was curable. For those who perceived that TB was a dangerous/serious and disgusting disease because it was an airborne communicable disease. Some patients related to fatal disease. It should be noted that experienced of TB patients and community population affected perception. People, who had relative die of TB, would perceive that TB was a serious disease. While, people who knew someone cured of TB would had positive perception toward TB disease. Chronic cough made people scare and discriminate to TB patient. It is a social stigma disease. Furthermore, TB patients stated that the seriousness of TB is discrimination.

TB was perceived as a contagious, and difficult to treat because of an prolong treatment which was similar with the study in Kenya (Liefooghe et al., 1997) and in Pakistan (Liefooghe et al., 1995) it was dangerous because of air born contagious disease which was easily transmission. A persistent cough and often

coughing up blood also made TB being dangerous. Stigmatization made TB being the most serious disease, or get worst. 40.2% of the Klong Toei community respondents believed that TB patients should not live in community to prevent TB transmission which the same as the study in Kenya (Liefooghe et al., 1997). There were wrong perception which is confusing with HIV/AIDS regarding mode of TB transmission, such as TB will spread through blood, sexual contact, result in perceived as a dangerous disease. Such perception was transformed to preventive practice such as sleep separate from spouse. This phenomenon was also found in South Africa some TB patients believed that there should be abstinence from sex while on treatment (Edginton et al., 2002). Prolonged self-treatment by buying drug from drug store as well as the social stigma attached to the disease increase patient's delay.

Wrong Perception: Cause: Confusing: Alcohol, Cigarette,

TB is also attributed to causes such as smoking, alcohol, hard work, exposure to cold and sharing with TB patients. Many participants believed that TB was hereditary. These perceptions were similar with the study of Liefooghe et al. (1997) in Kenya, and South Africa (Edginton et al., 2002). Furthermore, TB was believed that it could spread due to environmental pollution which was the same as the study in South Africa (Edginton et al., 2002).

For men who used regular alcohol was more likely to ignorance their related tuberculosis symptoms because they believed that heavy drinking alcohol cause of those symptoms. Similar with those who heavy or regular smoke they thought that smoking causing the cough. This perception may lead to the longer delays in TB diagnosis. *"I am fatigue and I though that it might be because of too much drinking alcohol."* This is similar with the study in Auckland (Calder et al., 2000) which

delayed presentation by patients was found in smokers, and patients reporting fear of what would be found on diagnosis. Awareness program for high-risk population are needed to encourage early reporting of symptoms.

Initial symptoms such as cough and fever are often overlooked and/or confused with a common cold. The perception by some respondents that tuberculosis is incurable, transmittable and associated with HIV/AIDS, led to the understanding that TB is a very dangerous disease. This, in turn, contributes to social avoidance and the resultant consequences in TB patients. (Gelaw et al., 2001) Study in Chiang Rai (Ngamvithayapong et al., 2000) revealed that people had good knowledge of AIDS but they knew little about TB. People defined persons losing weight, having fever and cough as AIDS rather than TB. This also resulted in delay in seeking care and non-adherence to TB treatment in some patients who suspected they had AIDS, and feared AIDS detection. In case of Klong Toei, it seemed that the situation was worse than that since not only stigma attached slum community but also AIDS, TB and narcotic drug.

Salomon et al. (1999) found that fewer than half of drug users knew that HIV-related TB could be treated. While, less than half of the Klong Toei community respondents perceived that if PLWHA had TB, they need to treat TB. TB is not only the problem of the individual but also the community's and even that DOTS strategy is well applied, ongoing transmission of infection occurs before patients present to the diagnosis centers (Godfrey-Faussett, 1998).

In Thailand, as well as in Bangkok, misperception related to TB transmission is remaining high. Sharing food or drinking water with TB patients is regarded as risky for TB infection (Na-Ranong, 2007). Similarity of this study were found in

Chiang Rai (Ngamvithayapong et al., 2000) and also in Klong Toei community. Some TB patients believed that they should be abstinence from sex while on treatment (Edginton et al., 2002). In Klong Toei community, some TB patients also believed like that

The findings of this study reveal the several important gaps in TB knowledge existed in this community population which urgent need for a TB education campaign. The dissemination of TB knowledge to the community should be done suitably in a positive approach, in term of stimulating and encouraging TB suspected cases to seek care, otherwise the exceeding scare of TB will occur similar to AIDS. However, education of the community about TB treatment may have a negative impact if treatment services are not widely available or are of poor quality (WHO, 1999). Increase capacity for TB counseling. Information about tuberculosis including preventive therapy should be made available and part of a package of care for people living with HIV/AIDS (Godfrey-Faussett, 1998). In additional, the community has a role to support the patients to complete the treatment including other social service assistance and incentives such as transportation should be available to TB patients in the completation of therapy (Etkind in Rom & Garay, 1996).

Regarding TB symptoms that should be aware for community population is people who have TB might have different symptoms from each other. It is unnecessary for everyone who has TB must have systematic symptoms as their perception, start with cough, fever, weight loss, haemoptysis, night sweats, and loss of appetite, shortness of breath, chest pain, and tiredness respectively. Many patients in this study, for the initial symptoms, reported that they never cough, but have tiredness or lose appetite only. One female who was declared cured TB said *"I heard that if*

someone have TB, they must cough, cough with blood. I never cough so I did not think that I had TB. I could not eat and lose weight only." The study in Sudan (El-Sony et al., 2003) supported that cough was frequent among all chest patients, while other chest symptoms were present in a minority of patients with conditions other than tuberculosis (2.1-35.5%). Among pulmonary TB patients, the majority complained of shortness of breath (74.8%), chest pain (57.7%), and smaller proportion of haemoptysis (19.8%). Systematic symptoms were infrequent among patients with conditions other than tuberculosis(4.1-14.3%) compared with pulmonary tuberculosis patients, among whom systematic symptoms were very frequent (lose weight 91.6%, tiredness85.3%, fever 78.2%, night sweats 62.8%, loss of appetite 48.6%) Since most people perceived that the dominant of symptoms TB is cough, haemoptysis or weight loss resulting in delay seeking care. Thus, TB education must add this small thing but it may make difference for TB control and especially for people.

The study of Walaisathien and Prayoonyuang (2004) pointed that most of the patients had anxiety and stress about their illness Female patients had anxiety and stress more than male patients. Unsurprisingly, this study also was confirmed by that study. It is necessary to address this issue for health providers or group support or relevant agency that they need to do more than simply meet physical needs of the patients but also psychological needs. Programs which aim to meet the psychosocial and physical needs of TB patients are called holistic.

The study revealed that many community people lack awareness of the basic symptoms of TB. Even if they do know about the symptoms, they often do not know that diagnosis and treatment is freely available through government or NGO, health

services or that TB can be cured (WHO, 1999). Therefore, it is necessary to send this information reach to community population.

Perceived social stigma: Psychological distress, Wearing mask?

Perceived social stigma of TB patients resulted in psychological distress by self-stigma, self-discrimination and reluctant to comply with or rejection of a preventive practice method. “Wearing mask”. “Wearing mask” was revealed by patients that is a symbolic of disgusting and obvious discrimination since such practice, it would be overt or be suspicious of their TB status. In fact the stigma phenomenon of TB patients is similar with other communicable diseases such as HIV/AIDS or even with drug user. However, stigma attached of each kind might be different from each other. Community people and TB patients label TB, HIV/AIDS and Drug user in different way that associated with behavior. Study of Songwathana and Manderson (2001) in southern of Thailand found that persons who have infected with HIV were stigma because of sexually promiscuous behavior or from injecting drugs. In order to reduce stigma, handkerchief may be another option for patient and public to integrate as normal everyday life.

NGOs and community groups should participate in enhancing knowledge, understanding, and accepting TB patients, which will reduce stigmatization toward them. Mass media campaigns should target social segments in order to fight prejudice and to bring TB out of the shadows. Effective mass media campaigns should consider the proper usage of language and specific language of the different segments of the society to improve the social understanding and acceptance of people with TB and reduce stigma. At the same time, TB patients must be reduced perception of stigma

and improve their confident to maintain life, maintain social relationships and be able to live with other people in the community with human dignity.

6.2.4 Health Seeking Behavior of Community residents and TB patients

The current findings indicated that for most of community respondents and patients would visited drug stores for minor illness which was similar with the study of Somrongthong (2004); Suttajit (2004); Sermsri et al. (2005).

Community respondents and TB patients reported that they had visited health center or hospital for severe sickness which is similar to the study of Somrongthong and Sitti-amorn(2000).. Women and men in Klong Toei community have not a different health seeking pattern which is similar with the study of Somrongthong (2004) and Suttajit (2004) who prior conducted their studies in this community. Further more, it is similar with general people in Thai society that was examined by Na-Ranong (2007). Her study aimed to examine the impact of the 30 Baht Health Care Scheme—part of the Universal Health Coverage Program—on the health security of the Thai people , which was held both in urban and rural communities in eight provinces throughout all regions of Thailand (including the Bangkok Metropolitan Area). Different methods of Qualitative study of Na-ranong (2007) found that when people get sick, they have various health choice to choose for responding their illness which depends on how much it is serious. If it is a minor illness, they might do nothing or just take a rest or take a sleeping and waiting to see. If the symptoms still remain, they choose to buy the medicine from drug store or grocery shops which nearby their home. The medicine can be easily bought, just for a tablet or more than that. It can help to save their money. Na-Ranong concluded that health seeking behaviors were determined, often concurrently, by one or more of the

following factors: income, health care coverage, transportation costs, health status/symptoms, age group, and the information patients have. Study of Steen and Mazonde (1999) in Botswana suggested that more knowledge about patients' health seeking behavior and perceptions would be useful for health workers to improve in the area of health education.

Findings from both quantitative and qualitative revealed that, in the Klong Toei community, people first sought care from a drug store and then private practitioners (clinic or hospital) in spite of 70 % of respondents have “gold card” or “30 baht scheme”. 61.9% of respondents often initially consulted drug store if they have fever and cough. People do not want to lose their working time due to the limitation of official time services of the government health centers or hospitals Spending their time to see the government physician it can impose an economic burden on both patients and their families because they will lose their daily wage. Drug store and local private clinic are often perceived as more available in term of time and close to their houses by 68,9% of respondents. 28.9% of respondents gave the reason of self treatment through drug store because of fever and cough is minor illness. This finding reminded that drug stores can play an important role in minimize TB treatment delay. TB referral network system should be expanded to drug stores and also grocery shop. The result of this study was similar with the results study in Southern of Thailand (Rojpibulstit et al., 2006).

6.2.5 The determinants of accessibility of the TB services

Geographic accessibility

As the BMA HC 41 is, located just across to another side of main road, not too near to or too far from community, TB patients can get there within 10-30 minutes

by various transports or even on foot. This might be interpreted that easily to access to health center. However, the BMA HC is, quite alone, far from people, completely hidden, highly privacy, this might be another accessible reason for TB patient. Two patients from FGD informed that although, a doctor will transfer them to receive medicine near their home, they insisted to receive treatment here because they do not want anyone know that they have TB. Similar with a study of Khan in Peru (Khan, 2004) found that people are unwilling to seek treatment and care if they are seen by community residents entering the medical clinics daily to receive treatment. TB patients prefer to health facilities far from their homes to avoid being seen.

The transportation fare was subsidized by TB clinic of BMA health center it would increase TB adherence (O'Boyle et al., 2002). However severe sickness might prevent patient traveling to health center. It needs a proactive project to reach out for those patients.

Availability

Service time of health center was office time and available from Monday to Friday only. This might be limited the accessible to service since available time of providers and clients were not met. Thus, health center should expand the special time (late evening) for patients. Health-based care might need to reconsider to change for proactive service or cooperate with other agencies.

Affordability

As mention earlier, study of Na-Ranong (2007) found that health care coverage was one determinant factors of health seeking behavior. The highest priority of the poor regarding the health care is to acquire low-cost or free health care services. The 30 Baht health-care scheme has created more confidence for the poor and

underprivileged to walk into hospitals for medical treatment without concerns of huge medical bills Although the BMA health center provides free TB services for both Thai and non-Thai people, patient loss their income during TB treatment. Content analysis found that financial difficulties in term of loss income influence adherence of TB patients, especially for those who are daily paid. Some female and elderly patients were perceived to be more reluctant to seek health care and to seek care for cough from health facilities rather than male patients. Since those female and elderly patients' financial depend on their husband or their child, including burden of daily housework duty. Even male patient complained that *"TB sickness made me no money. I could not work. It means no money. I have to ask money from my Mom. It made me suffering since I could not support myself."* Thus, financial aid or food project should be considered for unemployed people or patients.

Acceptability

Although, TB patients accepted and faith in treatment of TB clinic of BMA health center, the quality of health center for TB treatment is questionable from community people. Although the 30 Baht Scheme can reduce health care expenditure for them, 60.1% of community people believed in the efficiency on TB treatment of health center that would be the same as big government hospital. 56% of them believed that the quality of TB medicine from using 30 baht card or social insurance was the same as big government hospital. Thus, it needs to disseminate the quality standard of TB diagnosis and treatment to public acknowledge and confidence for utilization.

Relationship between providers and patients

The trusting relationships providers form with patients have been shown to strongly influence treatment success. Of course, those above mention could found at the service of TB clinic, BMA health center 41.

However, for those who received services from private clinics/ hospitals felt unsatisfied with physician delay. Physician delayed in diagnosis or make critical errors in diagnosis and treatment because of inadequate knowledge resulting in treatment failure, continued infectiousness and progression of disease and development of drug resistance (CDC, 1995). Therefore, scaling up the capacity of private physicians in how to diagnose TB correctly is also urgent need for effective TB control. Another area that is necessary for adherence improvement and early seeking care in case of TB relapse, is two ways communication. Physician should consider what the patient is suffering from rather than why the patient is sick. Not only give enough time for discussion with patient (patient have a chance to ask questions) but also the key message regarding TB must be informed patients. Physicians must recognize the key message of TB information that they have to inform patients, those are as following.

Social support Need

Like other chronic diseases patients, TB disease patients require family and community efforts in providing care and support to them (Na-Ranong, 2007). Social support particularly the support of the family can greatly influence the health-seeking behavior. Social support comprised of emotional support (such as love, sympathy, respect, reminding), appraisal support (such as feed back, affirmation), and or information support (such as suggestion, advice, information) were also mentioned by

patients. *"I had cough for longtime till my wife told me to go to the hospital. I thought that she was worry about me, I had to go to the hospital."*

Community participation

There were statistical significances between male and female with 95% CI on the TB campaign participation (78.3%, P-value .003) and being a TB volunteer (63.6%, p-value .006). IDI found that female were more likely to participate in TB training and be TB care taker than male as role of woman is care taker. 92.3% of Community respondents agreed that cured TB patients should be TB campaigner because they have direct experiences in TB disease. Qualitative study also revealed that in an attempt to reach out to the community, the cured TB patient will be a good bridge, critical component in helping community residents to understand and aware to TB problems. Cured TB patients are willing to work for the benefit of the society, for their community, to help TB patients from suffering which they used to encountering with. They can relate and know how to over come that crisis situation. Study in Tanzania also found that the two most important sources of information about TB were health workers and former TB patients. (Wandwalo & Morkve, 2000).

"In order to raise awareness about TB, those who are cured TB treatment will be a good media since they have direct experience to tell their stories, to share their problems, to reflect their need, and to give recommendations to us." Housewife, age 56 years.

6.2.6 The Intervention to improve TB control

Bennett (1993) suggested that a qualitative study was appropriate when studying was very little descriptive information, and in addition, qualitative information may serve as a basis for designing a quantitative study, and in developing

the content for a questionnaire. Information from the qualitative study was used to develop the tool for quantitative data collection and also involved a qualitative follow-up study to interpret the results from mainly quantitative data (Clark, 2000). *C*ombining qualitative and quantitative methods may enable researchers to capitalize on the different strengths of the two approaches. Somrongthong and Sitti-amorn(2000) stated that a combination of methods using multi-disciplinary (including quantitative and qualitative) approaches should better reflect the "true" nature of a public health situation. For this study, the results of the qualitative and quantitative studies were integrated to fill the knowledge gap. Then the findings were provided to the partnership to identify ways and means for improving TB control programme.

As the results of qualitative and quantitative study, it indicated that if community will reduce new infection cases, a TB control program must comprise of these strategies.

1. **Strengthening capacity to related people**. Promote and support human resource development (HRD) by using participatory method.

   1.1 Health care providers should maintain friendly services and good communication to patients. Need to repeat or explain more regarding what is TB, the importance of taking medicine regularly and consistency for how long, TB is curable if take medicine as prescribed and mental support is also a key factor for adherence. Before curing time, a physician must be informed the TB patient to acknowledge that their TB could be recurrent and the importance symptoms of TB must be reminded to recognize. For private clinic or private hospital, physician must be strengthened in TB diagnosis and treatment as

National TB Program guideline that follow the WHO. Physician and nurse must be sensitive to the suffering of patients.

1.2 **Drug stores** have to be invited to participate in TB training and be a part of referral network system (partnership or friendship).

2. **Strengthening communication skill**. Communication skill also plays an important or influential factor of individual/ social perception. Physician, nurse, TB educator, and journalist need to strengthen their capacity on how to communicate the TB key message for their target audience. Workshop or participatory training must be held for each target group.

   2.1 **Physicians** need to learn what the key messages that patient should deserve to know, and how to explain or talk to patient.

   2.2 **TB nurses** must greet and give information and education to patients. Ask patients not only their symptoms or problems but also in general things to get more understanding from patients' situation and show concern.

   2.3 **TB educators** must give the right message in the right time and to the right audience. Do no harm; not using fear technique or unpleasant picture of patient to public, aware the unintended behaving in a stigmatizing way.

   2.4 **Journalists** know how to translate TB message to public without scaring them or increase social stigma. Correct the misperception such as TB is transmitted easily through eating together, TB patient is PLWHA, social consequence of stigma.

3. **Promote community participation**. Community involvement is needed at all stages to make communities active participants rather than passive recipients.

However, NGO and government have the role to facilitate and support the community for initiative and management.

4. **Develop partnership and friendship**. Partnership comprises of drug stores, private clinics, private hospitals, NGOs inside KT community, community leaders, representatives of youth groups, representatives of house wives, representatives of care takers, former TB patients, government hospitals and BMA health centers, should be formed as a TB partnership working together for TB control. This partnership must specify what is the common objective of TB control for this community and join some activities such as refer patient to get the right treatment or support. Mutual agreement must be created by partnership in order to reach consensus among diverse and divided opinions and achieve the goal. It should be signed the intention confirmation together. Divide role and responsibility for each person. Regular communication and meeting will motivate partnership must be active and can follow the progression. Monitoring and evolution must need for partnership and its activities. For those who join as partnership or friendship, should increase motivation by giving more incentive and social reward or recognition from the BMA Governor.
5. **Provide Teamwork training.** Since partnership is comprised of diverse people who come from various units, it is necessary to create the foundation for increased solidarity and respect among them. Although they are interdependent, they share responsibilities and need to interact together.
6. **Maintaining and promoting access to TB services**. Access to TB care is a critical key strategy of a TB control program which consists of

6.1 ***Geography accessibility.*** Since BMA HC 41 is located on another side of main community, it takes around 10-30 minute to get to it. It is highly to accepted by clients and be a factor that retained patients to treatment adherence. Therefore, health provider or people working on TB must consider that how people will reach your service or how your service will reach the customer. Do not let the distance obstruct your work. If it is an obstacle, people who work on TB must find another way to provide he method such as reach out program.

6.2 Free of charge. The availability of free and comprehensive care encourages more patients to adhere treatment. This has been witnessed in KT community, where the provision of free anti-TB treatment provides for TB patients whether Thai or non Thai.

6.3 To meet to the patients' need: availability of services Government clinics/ hospital should be an extended service time until 20.00 p.m. Daily paid patients who return from work will come to get medicine in time. Reach out program should be also considered for community-based care by cooperation with local *agencies.*

6.4 Friendly service. It should be noted that not only friendly services but also a shorter waiting item and seeing a physician as queue order making patients satisfied.

7. Promote the greater involvement/ participation of former TB patients and caretaker. Former TB patients who are declared cured of TB must be persuaded and invited to participate in TB control program and strengthening the capacity of affected communities to accept affected individuals. Support and encourage

former TB patients who are declared cured to be a solution of TB epidemic, rather than to be seen as a problem. Former TB patients have had a direct experience and will be a good media to TB awareness and stigma reduction campaign. Activities such as training and supporting cured TB patients as public speakers, educators and counselors have helped in promoting a better understanding of the circumstances of affected people. Increasing the visibility and integration of TB patients into community-based programmes can reinforce the message that TB patient have the potential to contribute constructively to their communities. This strategy will increase awareness in the community, regarding TB disease and also will increase acceptance of community, including to reduce TB-related stigma and discrimination. An experienced caretaker can encourage to share responsibility to friends in their community to enhance families' interest, and capacity for, caring for TB relatives.

8. **Develop Community TB Volunteer (CTV).** In each sub-community, CTV must be developed and promoted to work as counselor or educator for certain organization such as sub-communities, support group, TB club of health center, private sector or NGOs. CTV will closely work with staff of organization that CTV work for such as TB nurse, NGO staff. CTV will recruit from community people or people who are declared cured of TB, who willing to work for their community.
9. **Develop Community TB Coordinator (CTC).** CTC's role is mainly focused on default tracing and follow up a transfer out case to ensure continuous treatment (to help to minimizing the risk of anti-tuberculosis drug resistance). CTC will coordinate and collaborate among organization working on TB whether NGOs,

private clinic/ hospital or government clinic/hospital, that join as a TB control network or friendship. They should be recruited from community people or former TB patients or be promoted from CTV. CTC must get the salary from government or NGOs to carry out such activities including a motorcycle for clinic/hospital visiting and home visiting. Every morning, CTC must go to check a default case and transfer out case to identify where they are and what organization they are referred. Default cases must be followed up immediately to take them back to continue treatment. For those who were transferred out, CTC must go to check at the clinic or hospital that patients were referred to ensure that patients continue their treatment. In case of Klong Toei, CTC might work for BMA HC 41, DPF, Gluaynamthai clinic and hospital as a pilot project first. An evaluation needs to explore in order to extend to other areas.

10. **Establish the network of Default Cases Tracing or Following up TB case System.** This network requires commitment and high coordination and cooperation among those who are working on TB. They comprise of public health, private sector (profit and non- profit), and CTC. CTC will play a significant role to carry out his activity by closely coordinate and cooperate with public- private network for tracing. It requires intensively accuracy of the record and the report this network needs monthly evaluation in order to prevent services fragmentation and especially to prevent patient develop drug resistant or Multi Drug Resistant.
11. **Index case finding.** One factor of self-stigma and social-stigma is the fear of spreading TB germ to their family, to closet friend, and to others. Family people

must be informed for TB screening in order to prompt early treatment in case of having TB. CTV can help to educate patients and follow up index case.

12. **Home visit**. To improving the quality of care given to TB patients, home visit may also help to meet the need of affected people. Promote CTV or peer to visit patients and family for suggestion and provide home based DOT.
13. **Home/ Community based DOTS**. For those who suffer from severe symptoms or work for daily paid, home based DOTS will be appropriate to them. Voluntary family members who are screened as the criteria by a physician or a TB nurse, should be promoted to carry out this activity. CTV can help to monitor by daily visiting TB patients at their home since they know the community well. This service requires intensive training, practicing, and coordination among patient, patient's family who respond as DOTS watcher, CTV and health care providers (TB physician and nurse).
14. **Promote TB health education regularly and continuously**. Conducting a campaign on community awareness and information education. Different key messages must be delivered to each target group by using information from qualitative study which forms an important foundation for developing information, education and a communication (IEC) project. Anti-stigma education through participatory techniques must be presented to the community and social. Up to date information on TB epidemiology, transmission, diagnosis, treatment, TB related stigma and discrimination must be provide to participants. Factual knowledge, especially, the myths and the truth of TB, that adopted experiential learning should be presented to participants. From the results of this study suggests some important misperception regarding TB as below.

TB is a serious and dangerous disease.

TB is a disgusting disease.

TB is a disease of poor and dirty people.

TB can spread via drinking, eating together, close contact, sexual

Contact, blood, injecting (confusing between mode transmissions of TB and HIV)

All people with TB have HIV

Everyone who has AIDS must have TB

TB patients are drug addicts.

TB is easily infected

What is different between infection and clinical TB (active TB)

Smoking and alcohol drinking are causes of TB.

Wearing mask is a symbolic of dangerous disease.

Wearing mask is a stigmatization and discrimination.

Significant symptoms of TB is cough only.

15. **Raising awareness through the local media**. Using community radio to educate and correct misperception of TB by cooperating with the DPF which has arranged community radio for KT community. Influence people's opinion and positive attitude through awareness regarding TB.
16. **Integrate TB activities with general public events** in order to reach large numbers of people. Launch activities, increased press coverage, engage people around the issue on World Tuberculosis Day to remind the community about TB.
17. **Poverty reduction.** Community residents are harassed by poverty, narcotic, dwelling and environment problems which they give prioritize. For them TB is a

minor problem. In order to eliminate TB, it is necessary to integrate with those problems. Income generation is one solution for patient who unemployed.

18. **Advocacy through Printed media. One page of TB news letter** should be regular produced and provided to not only for organization working on TB but also to all organizations working in Klong Toei community. It should provide the up to date situation of TB and what is going on in community. The contents of news letter must present in positive way in order to prevent stigma and discrimination. It aims to stimulate the attention and motivate people to get involve in TB control programmed.
19. **Minimize stigmatization and discrimination**. TB control program needs to emphasize not only the medical dimension but also the social dimension since both are equally important and inter-correlation. A TB control program will not be effective if the stigmatization issue is not addressed. Stigma and understanding of the cause of stigma must be urgently addressed to health care providers and the public. To minimize self-stigma, it requires to promote the **effectiveness of life skills education** to cope with stigma and confidence among TB patients. **Peer group support** is a source to help TB patients reduce self-stigma and perceived social stigma. To reduce social-stigma, **the basic human rights and obligation** should be considered to promote to the public. It also needs to change people's attitude to TB. In order in reducing TB stigma, it needs to tackle the root causes of TB-related stigma, thus, **participatory education** will be appropriate to conduct at the community level, in fact every level. Since it can promote dialogue to develop communities' understanding of the epidemic and address the root causes of anxiety—fears relating to contagions and stigma. Peer educators are likely to be

the most appropriate to play an important role in this kind of work. Stigmatization associated with TB, AIDS and drug user must be clarified and correct information that not everyone who has TB are AIDS patients or drug addicted. Meanwhile, it should encourage greater community acceptance of, people who get sick with communicable disease, especially TB and PLWHA by promoting a better understanding of their situation.

20. **Promote Public to use handkerchief.** Since mask is stigma as symbolic of some thing different from general people or dangerous disease, in practice, it will be possible to be used only in health care setting. Handkerchief should be promoted to be another option. Using promotion not only to TB patients but also to everyone in society to use a handkerchief for multiple purposes such as to cover nose and mouth when sneeze or cough, to wipe the sweat, to wipe the face or mouth. This strategy should be integrated with health promotion activity and economic sufficiency philosophy (reusable) including help to reduce the environmental problems (global warming because of losing trees, tissue garbage). Promote handkerchief using must be done in positive ways and make people be proud to use it. It should be promoted as a symbolic of love and care to the one they love and to save this world. This means that anyone who uses it , they are responsible people and general activities such as a gift for special events or special day for new year festival, a gift for Valentine day.
21. **Establish a counseling unit inside sub-communities**. Counseling unit should be established inside a sub-health community center of each sub-community. It will provide counseling for respiratory disease for community residents but mainly will focus for TB counseling in order to avoid label and stigmatization as

TB unit. A voluntary screening and testing in vulnerable people, especially people who have one symptom of these symptoms ; chronic cough more than 3 weeks with or without blood, tired, fatigue, powerless, weight loss, or loss appetite, should be promoted for TB counseling.

22. **HIV counseling for TB patient. TB screening for PLWHA**. Increased uptake of HIV counseling and testing for TB patients and provide continuum of care for those who have HIV positive. Meanwhile, promote screening TB for PLWHA. These procedures must restrict to confidentiality and patients rights.
23. **Develop referral network system**. Referral system must be developed among drug stores, private clinics, private hospitals, NGOs inside KT community, community leaders, and government hospitals or BMA health centers. Patient will not only receive the continuous of care but also receive the holistic of care from partnership or friendship network.
24. **Establish peer support group/ TB club**. Promoting solidarity through group support. TB patients were suffering from mental depression and need support. Peer support groups should be promoted to establish in health centers. This support group can minimize the emotional suffering associated with TB-related stigma. It can work as peer consultant for TB patients to assist and coordinate with TB nurse in many ways such as provide health education, mental health support, general support, join certain activities together (e.g. health promotion activity, World TB day activity), that is related with TB problems. Support groups can encourage and provide opportunities for patients to express their feeling, empathies with each other, exchange their experiences, share their problems and

solutions and address issues concerning social support. It will help patients to adapt those coping styles.

25. **Promote risk and vulnerability group for counseling and screening for TB**. Provide education or counseling and screening TB for selected risk and vulnerable group such as PLWHA, drug users, sex worker inside community, index case, elderly people, and Diabetic Mellitus patient.
26. **Cough surveillance**. This activity requires NGOs that provide health services, Health center and target groups to coordinate and collaborate together. PLWHA, sex workers, drug addicted and alcoholic were the target population since these groups are vulnerable to TB. It needs a mechanism to follow up target groups with strictly to respect their rights and dignity. It hopes that after providing awareness participatory education to target group, they must be aware of their individual and collective vulnerability. They must take action to prompt self-report to NGOs or health center for TB screening and treatment whenever they have suspect able TB symptoms not cough only but also others relevant symptoms such s lost of weight, tiredness, lost of appetite. CTV will coordinate and refer them to health center for further screening and treatment.
27. **Established food bank.** It aims to help unemployed people who get sick for long time to minimize their economic burden. Food bank project needs public and private sector coordinate and cooperate together. Using a concept of philanthropist and social marketing to facilitate philanthropist and profit agencies to donate money or food product or supplementary or utensil for TB patient and other patient who have chronic disease and can not work. Food bank project should be

managed by NGOs with the cooperation with medical organizations and relevant agencies.

28. **Improve linkage and continuum of Care for TB and HIV**. TB control needs to link with HIV/AIDS services and enough support of patients' need such as financial support during they absent from their daily wage, supplementary food and drink. Extended the service to home visit and home based care in order to increase access to care and promote shared concern of family.
29. **Daily health education to TB patients and their family** in the right time with accuracy TB key message. TB patients who got the education were likely to adhere and came to see a doctor as medical appointment (interviewed TB nurse of BMA HC10 and BMA HC 41) Knowledge about the need to take daily medicine, especially after they felt better, knowledge of TB and availability of daily health education were increased adherence (Bam et al., 2006) Heavy case loads might limit the opportunity for education to TB patient by TB nurse. Therefore, peer of support group should assist TB nurse to provide TB education to TB patients and their family. Provide education must be aware that TB patient might have serious symptoms and be confused, not in the condition to receive education especially at the first time or first week of treatment. A 42 years HIV/TB patient expressed that *" I am so tired and fatigued when I arrived hospital. I could not remember what a doctor and a nurse told me. I am so confused and suffering with my symptoms at that time. If possible, I desired they tell my husband."* Thus, giving education must be enough sensitive to the conditions of patients and do not forget their accompany. Repeat the key message such as take medicine at the right time, the

right dose, regularly and consistency is also will help to remind patients and family to follow it.

30. **Eliminate infectious sputum**. As evidence of this study pointed that most of them did not know how to eliminate sputum in the right way which will result in infectious dissemination. To know how to eliminate their sputum in a right way is necessary to prevent transmission.
31. **Establish hotline phone**. A hotline phone for TB counseling will be one option of TB prevention and care accessibility. It should be available everyday particular in the evening time such as daily service from 10.00-20.00 o'clock. Whether government or NGOs run this activity, services need to record number of anonymous clients and problems.
32. **Promote health promotion**. Health promotion should be integrated to prevent TB illness. Regular exercise, stop alcohol drinking and smoking should be promoted to every one, especially for those who have chronic disease. General basic health preventive practice such as using serving spoon for eating with anyone, washing hand before eating and after using the rest room, cover your mouth and nose whenever you sneeze or cough and the reason of these action must be explained to social.
33. **Enabling supportive environment**. Good ventilation is one important key strategy of TB control because TB is spread through airborne droplets, overcrowding and lack of ventilation are key factors associated with infection. Promote using natural air without air condition, daily open the window to get the sunlight, and improve sanitation to reduce TB infection.

34. **Develop an action plan**. An action plan for each certain objective must be developed. It should answer at least these questions:

    What: what we need to achieve. (Objective)

    What action do you need to do in order to respond to the objective?

    Why: why we have to do it, if not, what will happen (rational?)

    Who: Who else will join and carry out this plan. The specific people

    Who will be responsible for each activity or each action should be identified by name or by position and organization.

    When: The date for starting and /or completing the actions. (Time frame)

    Where: Where is the location of a project?

    How: How activities will be carried out. Which method or technique will be appropriate to the context of certain kind of the problems?

    How will we know that we achieve it?

    How much: Budget for a project and from where.

35. **Accurate Record and report system**. Training for recording and reporting must be provide to each actors as each level since each group have different roles such as partnership, CTV, CTC. Establish certain records and report system at the beginning of project will be useful for monitoring and evaluation. Other important benefits of record and report system are this data reflex some certain situation or tell some trends.

36. **Monitoring and evaluation**. It is important to recognize that each project needs monitoring and evaluation to measure how far the project reaches. However, some projects such as reducing stigma and discrimination and promote human rights can take time. Thus, it needs to set appropriate indicator for each activities.

6.2.7 Scope and limitations of the study

This study has several limitations that should be acknowledged as follows:

6.2.7.1 Existing Data There were some limitation about the exact/ accuracy of TB prevalence in the Klong Toei community for the situation analysis phase, as record and reported of both BMA TB division and BMA health center at the study time might under report because patients were independent to seek care from the hospital or health facility that they are satisfied with or even study time (start using 30 baht policy), results of survey pointed that community residents used the services of BMA HCs only 23.2%, while the majority over 53.35% chose to go to private hospital/clinic and the rest went to other hospitals. Therefore, the incidence or the prevalence of TB patients of BMA HC might be under reported This evidence suggests that it needs to cooperate with private sectors and other agencies that work in this community.

6.2.7.2 Community Participation: Difficulty in inviting health providers to join as partnership/stakeholder/CCTB. Due to the limitation of manpower and the time constraint of the TB health care providers of BMA HC, participation as a CCTB and to join community activities is not possible. A full-time TB nurse not only responses to DOTS everyday in the morning but also has to do home visits and to assist other activities at Out Patient Department in the afternoon. It was difficult to separate her from the routine job; otherwise nobody took care of patients. Aside from

this, the director of BMA HC seemed more likely to prefer to cooperate, as health center-based, with this project as he would be more happy if his staff were not absent from their work. In addition, TB physician might be aware his role was only as part-time physician to provide treatment to TB patients on Tuesday and Friday during 09:00-12:00 o'clock. However, the research project got very good cooperation from TB nurse on the process of IDI and FGD including participation in CCTB meetings to share her situation and her experiences regarding TB in KT community on her holiday (Saturday in the afternoon). Although, CCTB had a chance to exchange the experiences with her for only half a day, the meeting was very fruitful and the awareness on TB problems was rising remarkably. Also, the physician was willing to give time for interviewing and sharing his ideas in spite of the fact that he was busy.

It was also difficult to encourage the private clinic physician (that belongs to the branch of private hospital which support 30 baht scheme) to be involved in this research as the priority of those physicians was to respond to their duty as the employees of a private hospital. At, the same time, the private clinic physicians that were usually owned by a full-time physicians from the hospital, and will open only in the evening.

6.2.7.3 Quantitative Study

1 Sampling recruitment: Imbalance of sampling.

The sampling process leads to risk of non-representative. Quantitative data collection was not designed for a balanced representative, between female and male of the Klong Toei community residents. Therefore, the females may be over represented and the males under represented, due to operation difficulties. This survey applies only to those who were in the community on the day of the survey and who completed the survey. In formation from housewives revealed that as most men go out to work from Monday to Saturday and or someone might also work on Sunday, leaving women to stay at home to do house work. For those who were in their workplace during the day time, for data collecting, the proper time was in the late evening or at weekend. However, the late evening time was not appropriate to proceed with such an activity for the research team, due to limitation of community environment. Firstly, it was dark as the electricity is not available every where inside the community. Secondly, the path is too narrow, then, some drunken men around an isolated place and a lot of street dogs. Further more, it seemed that they would like to take a rest or watch television for their recreation, much more than concentrate to answer the question after working hard.

2. Research Assistants: participation vs. experienced

Because CCTB would like to participate in household survey, selecting experienced research assistants are limited. Limitation of interviewer's skill due to the short training (only one day) resulted in losing some necessary information (not completely fill out the semi-structured questionnaire). To minimize this event, researcher checked the questionnaire every evening on that day. The research team had a meeting in order for discussion, consultation, and feed back, sharing the experience or lessons learnt from time to time.

6.2.7.4 Qualitative study

1. FGD: Sampling technique.

The TB patients, respondents, were recruited based on their willingness at the time of their enrollment treatment and data collection took place. Therefore, respondent selection was not based on random sampling and cannot represent the default treatment patients. Further more, selection bias as current TB patients who enroll and receive treatment at BMA HC might over report their satisfaction with the health center while information of patients who default from treatment was absent. Further study should recruit those who default from treatment to participate in the research in order to ensure the effectiveness of the TB service. However, tracing default treatment patients needs to be aware regarding ethic and human rights issues, related to patient's s confidential.

2 In-depth interview

Recall bias of former TB clients, over report for current clients. Since former TB patients who success cure treatment for one year might could not recall some key points. The similar this study should select former TB patients who success cured treatment not over 2 months if possible. Meanwhile, current patients (at the study time) who are on the process of treatment might or might not default for anytime. Another limitation is that current patients who have enrolled for TB treatment at this center might be over report for their satisfaction because they might be afraid of losing some benefits.

6.2.7.5 Generalization of the results.

This study conducted in the low income urban congested community. To generalize the present findings of perception of TB among community residents to other settings in Thailand or elsewhere may be limited. Only the community participation approach and process that aims to develop TB control program may generalize or apply to other areas, with similar socioeconomic settings. In additional, this research had generated a useful baseline of information from both community views and the TB patients view, for future study in these studied areas.

6.3 Conclusions

Increasing effective TB control programme in the urban congested community need multi-sectoral collaboration under good coordination among those organizations. It requires strong commitment, regular facilitation and supports each others .The findings indicated that existing health services could be categorized into 2 types: public and private sector. The services were divided into 4 levels, 1) primary healthcare, 2) primary care, 3) secondary care and 4) tertiary care. The community respondent preferred private health services than to government services. Most of respondents hold the 30 Baht scheme card, the national universal health insurance. TB patients who were experienced private service user were more likely accepted that be impressive government TB service than private sector. This study found that gaps, fragmentation and redundancy were all present in the community among those who provide health services, especially private sectors. It was really need to coordinate and cooperate among those sectors. Misperception regarding cause of TB, initial

symptoms of TB including drug seller and physician factor resulted in treatment delay. The findings revealed that no difference TB services needs for both genders (excluding gender issues). Proactive TB services were suggested from TB patients. High perceived TB stigma which relate with HIV/AIDS and IDU contributed to psychological impacted. Wearing mask was viewed as stigmatize symbolic. General geographical and socio-economical characteristic of Klong Toei slum is similar with the traditional definition of conditions and even though most of respondents had low education, their health seeking behavior were more likely be different from traditional stereotype. They had moderate knowledge of risk and severity of TB and rarely consulted traditional health providers. Urban life with high technology, modern mass media including active NGOs surrounding them in the community might enhance their perception more rely on modern medicine. The findings of this study will be one of the references to improve the efficacy of TB control programme for local policy makers, local health providers, local community organizations, and other relevant people.

The important determinants of accessibility that the policy maker, health care provider, NGOs, and local organization should consider were: 1) friendly service, 2) free service and financial and social support for transportation, supplementary food 3) chance to meet a physician at the health facility, 4) convenience of time for visiting the health center, 5) knowing about services of health facilities (service availability, service quality and free service), 6) access to accurate TB knowledge/information, 7) stigmatization and discrimination is a significant barrier of patient, 8) poverty and priority problem of patient or community people should be integrated into TB programme. Therefore, the policy maker should reconsider TB services management

in terms of manpower, service times, whereas other concerned people should play a role in disseminating information about the availability and free of TB health services in the community. Sine the study found that TB was not just a public health problem but also it is a social problem , thus, in order to eliminate TB, it requires integrated both strategies' dimension together.

This participatory research methodology aimed to engage community people and local organization in action-oriented research through partnership formation. A partnership investigated in improvement in TB control of Klong Toei urban slum community to ensure accessibility and need in TB information and treatment. The factors associated with local perception, attitude, and knowledge including health seeking behavior that may influence presentation and treatment adherence, and that could assist in designing health education component intervention strategies for improvements in early diagnosis, early treatment and treatment adherence were identified. Furthermore, accessibility to TB services and the need assessment to determine appropriate strategies in specific developing community contexts like Klong Toei were also investigated. The qualitative study was pointed that both patients and community residents needed to get the specific accurate information, education and communication regarding risk, severity of TB and its social consequences among. Motivation factors that highly influenced to adherence to treatment comprised of geographical accessibility, service affordability, service acceptability, the quality of relationship between health care providers and patients, state of health of the patient, defaulter retrieval procedures and home visit implemented, family and social support (psychological, stuff in kind and in cash).

6.4 Recommendations

Further study should be explored as follows.

1. To explore the physician's knowledge and skill in TB diagnosis and treatment for both public's and profit-private's sector physicians.
2. Did using the 30 baht- card result in delay treatment because of itself (limited budget then result in the ignorance of public or private physician for further investigate) or delay because of quality of physician?
3. To determine that perceived stigma and its effect is worse than actual stigma or not. If so, both require different approaches in terms of understanding, and interventions.
4. Do people experience different levels of stigma when they are healthy and when they are sick with TB disease?

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APPENDICES

APPENDIX A

INTERVIEW GUIDELINE FOR CURED TB PATIENTS

I. Introduction

1. Describe the purpose of the project and the visit.
2. Confirm that interview is voluntary.
3. Stress that the interviewee is free not talks about any particular issue and/or to terminate the interview at any time.

II. Background characteristics

1. How long have you cured TB?
2. How long did it take for treatment?
3. Are you working? (If working): What is your job?

III. TB perceptions

1. How did you know that you have TB?
2. How did you feel when you first time knew that you had TB?
3. Where did you seek treatment prior to visit the health center? Why?
4. Do you think that TB is a serious or dangerous disease? What are the reasons?
5. Do you think TB is recurrent?
6. What was most difficult for in dealing with this disease?
7. What could motivate you to adhere to the TB medication?
8. Did TB affect your life? How?

9. Did your family or neighbors know or suspect that you had TB?
10. (If yes): how did they react to it?
11. Had your relationships with your family or neighbors changed since you became ill?
12. What was your reason to enroll for the treatment at the health center?
13. Should cured TB patients participate in TB control? How?

IV. End of interview

1. Open for questions from the participants.
2. Thank you for their participation and contribution.

APPENDIX B

INTERVIEW/ FGD GUIDELINE FOR TB PATIENTS

I Introduction

1. Describe the purpose of the project and the visit.
2. Confirm that interview is voluntary.
3. Stress that the interviewee is free not talks about any particular issue and/or to terminate the interview at any time.

II Background characteristics

1. How long have you lived here?
2. Who else lives in the house with you?
3. Are you working? (If working): What is your job?

III TB perceptions

1. Could you please let me know what disease do you have? How did you know that you have TB?
2. How did you feel when you first time knew that you had TB? How did each of you cope with TB?
3. Does TB affect your life? How?
4. What are the symptoms of TB?
5. Where did you seek treatment prior to visit this clinic? Why?
6. Why some people have TB and the other not?
7. What was the cause of TB in your case?

8. Do you think that TB is a serious or dangerous disease? What are the reasons?
9. Do you think TB is curable? Is it recurrent?
10. Which one is more serious, between TB and HIV/AIDS? Why?
11. Do you think that TB is associated with HIV/AIDS? How?
12. How to prevent other people from TB?
13. Did your family or neighbors know or suspect that you had TB? If yes: how did they react to it?
14. Have your relationships with your family or neighbors changed since you became ill?
15. What is your reason to enroll for the treatment here?
16. Could you please suggest what sort of TB services need to be improved?
17. What kinds of support do you need from whom else?
18. What is the role of community in TB control?

IV. End of interview

1. Open for questions from the participants.
2. Thank you for their participation and contribution.

APPENDIX C

INTERVIEW GUIDELINE FOR CARETAKERS OF TB PATIENTS

I Introduction

1. Describe the purpose of the project and the visit.
2. Confirm that interview is voluntary.
3. Stress that the interviewee is free not talks about any particular issue and/or to terminate the interview at any time.

II Background characteristics

1. Are you working? (If working): What is your job?
2. If not: what reason make you unemployed?

III TB perceptions

1. Have you ever heard about TB disease? How?
2. Is there anyone in your family have TB? Who?
3. How do you feel when you first time knew that your member family had TB?
4. What is your role as care taker? How do you feel when you provided TB care to member family?
5. What was the most difficult for you in dealing with this disease?
6. Does TB affect your family? How?
7. Do you know how long TB patient need to take medicine?
8. What kind of support do you need from community?

IV End of interview

1. Open for questions from the participants.

2. Thank you for their participation and contribution.

APPENDIX D

Interview/FGD Guideline for non-TB

III. Introduction

4. Describe the purpose of the project and the visit.
5. Confirm that interview is voluntary.
6. Stress that the interviewee is free not talks about any particular issue and/or to terminate the interview at any time.

IV. Background characteristics

4. How long have you lived in this community?
5. What is your role in this community?
6. Could you please tell me what evidence of community cohesiveness?
7. Are there any group efforts in the neighborhood to improve the living conditions or environment of this community?
8. What are the top seven serious problems of your community?

III. TB perceptions

14. Have you ever heard about TB disease? How?
15. Are there anyone in your community have TB? How many?
16. How is your community associated with TB?
17. Did TB affect your community? How?
18. What was most difficult for in dealing with this disease?
19. Do you think TB is curable? Is it recurrent?
20. Which one is more serious, between TB and HIV/AIDS? Why?
21. Do you think that TB is associated with HIV/AIDS? How?
22. How to prevent your community from TB?
23. What is the role of community in TB control?
24. In which way, can we raise TB awareness for community residents?
25. Do you think that you can participate in TB control for your community? In which ways?

IV. End of interview

3. Open for questions from the participants.
4. Thank you for their participation and contribution.

APPENDIX E

HOUSEHOLD SURVEY (STRUCTURED) QUESTIONNAIRE

No. of questionnaire …. ….code……

Interview Date……..Month…….Year….

Name of interviewer…….……

Instruction to interviewer

" Good afternoon. My name is ……living in …..……. Now I am assisting Ms. Dares Chusri, PhD. Candidate of the College of Public Health Sciences, Chulalongkorn University, who is doing the household survey in order to improve the TB services in this community by the collaborating with DPF, leaders and network in this community .

This study procedure consists of interviewing about demographic data, TB knowledge, perception, prevention, attitude, risk opportunity, and health care of respondent including health choice. Your decision, your name, and your result will be maintained in confidence and will not be released to anyone outside of the staff conducting the study.

I would like to invite you voluntarily participate in this study. If you would like to be a part of TB control in order to develop your community and if you agree, please sign in consent form. Thank you very much for your kind contribution and support"

Please mark (√) in ☐ or fill in a blank space .

Part I Demographic data

I.I Personnel data

1. Sex ☐ male ☐ female
2. Age ……(years)
3. What is your marital status?

   ☐ Single

   ☐ Couple

   ☐ Widowhood/ Divorced/ Separated [4] others specify…….. ……

4. Education level (What is your education status?)
   ☐ No schooling (illiterate)
   ☐ Literate ☐Primary school ☐High school
   ☐ College/ Vocational training ☐University (Bachelor or above)
   ☐ Other (specify)……
5. What is your religion?
   ☐Buddhist ☐Christian ☐ Muslim ☐ Other (specify)……..……
6. What is your occupational in the last six months?
   ☐ Unemployed/ student/housewife
   You receive the financial support from whom (specify)…….
   ☐ Employee/worker Vender/own employer (food shop)
   ☐ Others(specify)……
7. How much do you earn every day ?
   ☐100 THB or less than ☐ 101-200 THB
   ☐201-300 THB ☐ 301 THB or more than
   ☐Other (specify)…….……
8. Is your income enough for your expenditure?
   ☐ Enough but not enough for deposit ☐ Not enough and have debt
   ☐ Enough for deposit ☐ Not enough but no debt
   ☐ Other (specify)…….……
9. How long have you been live in Klong Toey community?
   ☐ 1-10 year ☐ 11-20 year
   ☐ 21-30 year ☐>30 year
10. How many family members do you have in this house?
    ☐ 1-5 ☐ 6-10
    ☐ >10 ☐Other (specify)…….……
11. Do you hold any health card?
    ☐ No
    ☐ Yes. What kind? ☐ 30 baht card
    ☐ Social insurance card ☐ Others(specify)……
12. Do anyone in your family has TB disease?
    ☐ No ☐ Yes ☐ Do not know
13. Are you a cigarette smoker at present?
    ☐ No ☐ Yes (specify number of cigarette per day)……
14. Are you drinking alcohol at present?
    ☐ No ☐ Yes (specify how often)……

15. Have you ever heard about TB?
    ☐No ☐Yes

16. Do anyone in your family member have TB disease?
    ☐No ☐Yes ☐ Do not know

17. Do you think what problems of the community that make community residents Unhappy?

    - A dislodgment of dwelling place problem ☐No ☐Yes
    - Poverty ☐No ☐Yes
    - Unclean environment inside community. ☐No ☐Yes
    - Unsafe community ☐No ☐Yes
    - Unemployed ☐No ☐Yes
    - Financial problem ☐No ☐Yes
    - Family problem ☐No ☐Yes
    - Other (specify)……

18. Do you think which social problems in your community that needed a solution?
    - Illicit drug problem ☐No ☐Yes
    - Poverty problem ☐No ☐Yes
    - A dwelling place problem (be demolished, demolition) ☐No ☐Yes
    - Unsafe inside community ☐No ☐Yes
    - Unclean environment inside community ☐No ☐Yes
    - HIV/AIDS problem ☐No ☐Yes
    - TB problem ☐No ☐Yes
    - Other (specify)……

Part II. Perception and participation

19. Does living in slum increase risk of getting TB?
☐Agree ☐ Disagree ☐ Not sure

20. Will eating and drinking together with TB patient cause you have TB?
☐Agree ☐ Disagree ☐ Not sure

21. Can you get TB if you touch blood of TB patients?
☐Agree ☐ Disagree ☐ Not sure

22. Are PLWHA more likely to have higher risk to have TB than other people?
☐Agree ☐ Disagree ☐ Not sure

23. Is TB germ from PLWHA more serious than general TB patients?
☐Agree ☐ Disagree ☐ Not sure

24. Is TB a chronic disease?
☐Agree ☐ Disagree ☐ Not sure

25. Is TB a dangerous disease?
☐Agree ☐ Disagree ☐ Not sure

26. Does anyone who has TB, it means that s/he has HIV/AIDS?
☐Agree ☐ Disagree ☐ Not sure

27. Will TB patients who cured treatment have chance to have TB again?
☐Agree ☐ Disagree ☐ Not sure

28. Is TB in PLWHA treatable?
☐Agree ☐ Disagree ☐ Not sure

29. Will people who got BCG vaccination never have TB anymore?
☐Agree ☐ Disagree ☐ Not sure

30. Can TB patients stop taking medicine by themselves if they feel better?
☐Agree ☐ Disagree ☐ Not sure

31. Should TB patients live in the community ?
☐Agree ☐ Disagree ☐ Not sure

32. Can we prevent TB infection by closing the window?
☐Agree ☐ Disagree ☐ Not sure

33. Do we must treat TB in PLWHA ?
☐Agree ☐ Disagree ☐ Not sure

34. Do you prefer to live with PLWHA than TB patient?
☐Agree ☐ Disagree ☐ Not sure

35. Can TB patient get free of charge treatment by using 30 baht card or social insurance card?
☐Agree ☐ Disagree ☐ Not sure

36. Is the quality of TB medicine from using 30 baht card or social insurance the same as big Go hospital?
☐Agree ☐ Disagree ☐ Not sure

37. Is the efficiency on TB treatment of Health Center the same as big Go hospital?
☐Agree ☐ Disagree ☐ Not sure

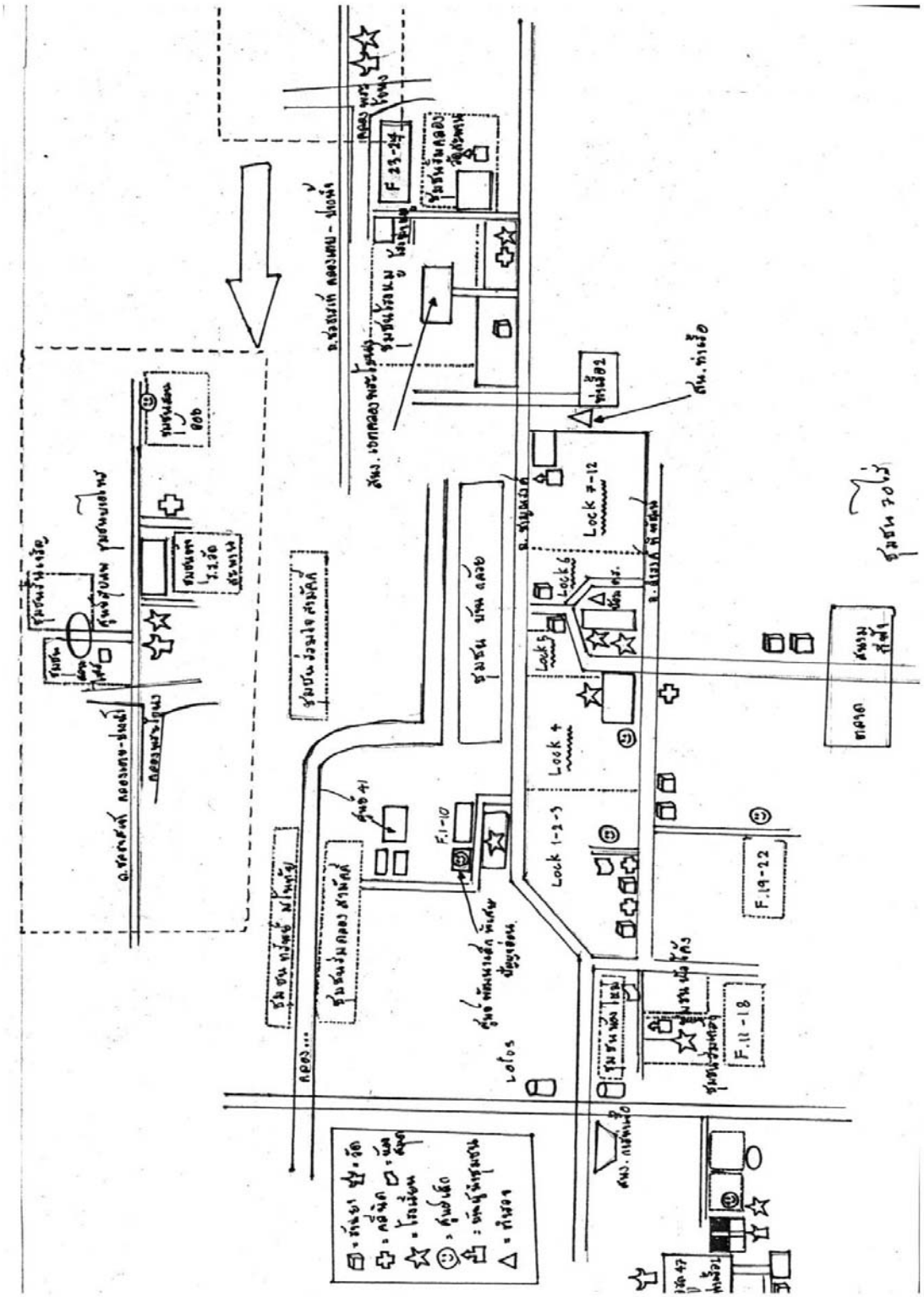
38. Will you participate in TB training?
☐Agree ☐ Disagree ☐ Not sure

39. Will you volunteer to be TB care taker?
☐Agree ☐ Disagree ☐ Not sure

40. Should we promote TB patient to be TB campaigner to increased community awareness?
☐Agree ☐ Disagree ☐ Not sure

APPENDIX F

COMMUNITY MAP



CURRICULUMVITAE

NAME Ms.Dares Chusri

PLACE OF BIRTH Nakhonpathom

EDUCATION

2001 M.P.H. (Health systems development),

The College of Public Health, Chulalongkorn University.

1982 B.N. (Nursing)

The Thai Red Cross Society college of Nursing, Chulalongkorn University.

PROFESSIONAL EXPERIENCES

Year	Position	Organization
Sep07- 2008	Country Director	USCRI Thailand
Jun2001-Aug 07	Provided consultancy services for both international and national (such as Raks Thai Foundation, International Organization for Migration, World Vision, Lao PDR, UNFPA. Royal Thai Army) in research evaluation and training program. Areas involved in are HIV/AIDS, TB, reproductive health and sexuality education, migrant health and migrant rights.	
1995-2001	Office Director	The National Thai NGO Coalition On AIDS
1994-1995	Program Coordinator	The National Thai NGO Coalition On AIDS
1989-1993	Registered Nurse	International Committee of the Red Cross(ICRC),Khao-I-Dang Khmer Refugee camp
1988-1989	MCH officer	CARE International, Site 8 Khmer refugee camp, Aranyaprathet
1987-1988	Instructor	The Thai Red Cross Society, College of Nursing.
1982-1987	Staff nurse	The Thai Red Cross Society