YANGON UNIVERSITY OF ECONOMICS
MASTER OF PUBLIC ADMINISTRATION PROGRAMME

AN ANALYSIS ON KNOWLEDGE, ATTITUDE AND PRACTICE FOR TUBERCULOSIS AMONG MIGRANTS

(A CASE STUDY IN HLAING THARYAR TOWNSHIP, YANGON)

SAN LATT PHYU
EMPA - 51 (16th BATCH)

AUGUST, 2019

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A thesis submitted as a partial fulfilment towards the requirement of the degree of Master of Public Administration (MPA)

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This is to certify that this thesis entitles "**Knowledge, Attitude and Practice of Tuberculosis among Migrants (A Case Study in Hlaing Tharyar Township, Yangon Region)**", submitted as a partial fulfilment towards the requirements for the degree of Master of Public Administration has been accepted by the Board of Examiners.

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ABSTRACT

The objective of this study is to analyse the status of TB knowledge, attitude and practices of migrants who living in Hlaing Tharyar Township. This study used descriptive method and the sample size of the survey was 219 respondents who are migrants, moving from place of origin to the present place. Although awareness is an important component in tuberculosis, there is not much knowing migrant population knows about TB and there is no survey in Myanmar with this title. According to this survey, migrant have well informative on disease transmission, risk population and seeking health care services. Migrants have positive attitude as seeing most of the respondents agreed on the statement of attitude. There need to take some measure for practice with the aspect of infection control. Apart from that, study provide the pattern and nature of migrant by analysing on education, income level, destination of origin, length of the stay and cause of migration.

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

ACF	Active case finding
BHS	Basic health staff
CBTBC	Community-based TB care
CNR	Case Notification Rate
DOTS	Directly Observed Treatment System
EHO	Ethnic health organizations
EPHS	essential primary health service
FHI 360	Family health international 360
GDP	Gross domestic product
HIV	Human Immunodeficiency virus
INGO	International Non-Governmental Organization
JICA	Japan International Cooperation agency
LTBI	Latent TB infection
MDM	Médecins du Monde
MDR TB	Multi-drug resistant TB
MHAA	Myanmar Health Assistant Association
MMA	Myanmar Medical Association
MMCWA	Myanmar maternal and child welfare association
MMR	Maternal mortality ratio
MRCS	Myanmar Red Cross Society
MSF-H	Médecins Sans Frontières Holland
NCDs	Non-communicable diseases
NHC	National Health Committee
NSP	National Strategic Plan
PSI	Population Service International
RR TB	Rifampicin resistant TB
SDG	Sustainable Development Goal
U5MR	Under five mortality rate
XDR TB	Extensively drug resistant TB

CHAPTER I
INTRODUCTION

1.1 Rationale of the Study

Globally, Tuberculosis (TB) is one of the top ten causes of mortality and the leading cause of morbidity from a single infectious agent (World Health Organization, 2019). It has recently become more complicated due to the emerge of the drug-resistant strains. On ranking the common causes of death in world-wide, TB stands at the sixth position, although TB is a curable and preventable disease.

From 1998 to 2015, Myanmar was one of the top twenty-two high TB burden countries, forty-one in high TB-Human Immunodeficiency virus (HIV) burden countries, and twenty-seven in high Multi-Drug resistant TB (MDR TB) burden countries. With a set of Sustainable Development Goals and End TB strategy for the period of 2016-2030, there is a revision for TB burden countries in 2015 by the World Health Organisation. Myanmar had been unchanged in high burden country lists for TB, TB/HIV, and MDR TB, of 30 countries (World Health Organization, 2015). It is also the second most common cause of death attributable to infectious diseases in Myanmar (Institute of Health Metrics and Evaluation, 2017).

For too long, Myanmar has been trying to address TB as a medical issue only, but TB has always been a disease of poverty. It has affected those who are most marginalized, especially in developing countries. Eliminating TB means tackling the root causes of poverty, the causes of stigma and marginalization, which include, among others, migrants. The Directly Observed Treatment System (DOTS), a most effective treatment system for TB control, effectiveness might be determined by the patient's health-seeking behaviours, which is related to patients' demographic characteristics, knowledge of TB, health education, and traditional beliefs. These are thought to have a crucial impact on adherence to treatment and treatment.

success rate (Esmael, 2013). To realize the commitments made to 'leave no one behind' under the United Nations 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals, a more realistic and inclusive understanding of the

experiences of women and men migrant workers are essential (International Labour Organization and International Organization for Migration, 2017).

Migration is a global phenomenon and an estimated 244 million of international migrants and 740 million internal migrants globally (International Organization for Migration, 2018). Migrants are one of the key affected population included in the National Strategic Plans of TB. This is also in line with the WHO recommended TB strategy, which includes Tuberculosis diagnosis and systematic detection of high-risk contacts and groups such as Component of the first pillar: integrated and patient-centered care and prevention. This is also consistent with WHO recommended End TB Strategy, which includes early diagnosis of tuberculosis and systematic screening of contacts and high-risk groups as a component of first pillar: Integrated, patient-centred care, and prevention.

In Myanmar, Internal Migrants constitute a significant population. According to 2014 Census data, over 9 million in 2015, equivalent to almost 20% of Myanmar's total population (UNESCO, UNDP, IOM and UN-Habitant, 2017). Most internal migrants moved either with their state/region of origin to seek an improvement in employment or income. Only 4 in 10 states / regions, they have net migration, namely Yangon, Shan, Kayah and Kachin, while the main states / regions of emigration are the dry zone (Magway and Mandalay), Ayeyarwady and Bago. Yangon and Mandalay are the main urban destinations. (Helvetas, 2015). 71% of all formal sector migrants are from Ayeyarwady, Yangon, Mandalay, and Bago. According to census data, the population density of the Yangon region increased from 310 people per square kilometer in 1973 to 387 people per square kilometer in 1983 and 716 people per square kilometer in 2014. This is about nine times higher than the Union level population density of 76 persons per square kilometer. Yangon, conveying nearly half of MDR TB patients, population represents 15% of the total population of Myanmar. It was put the main targeted area for TB control activities. Among the townships of Yangon, Hlaing Thar ar is the most populated township with a significant number of internal migrants and indicated 5% of total Myanmar population (Census, 2014).

It is essential that migration be recognized as a social determinant of health, as migrants and mobile populations face many barriers to accessing essential health services due to several factors, including the lack of inclusive health policies for migrants, language barriers, poor continuity of care due to mobility, lack of portability of health insurance or no social protection, just to name a few. Disparities Affect and

Increase Well-Being of Migrants and Host Communities Challenges to achieve global health and sustainability goals related to health Development Goals (SDGs). High morbidity and mortality among migrants, in particular situations of irregular, forced or exploited migration, it is also a critical assessment that is undervalued health problem that deserves international attention (International Organization for Migration, 2017). Although generally suitable for travel, migrants may have a higher risk of being infected or develop tuberculosis (TB) based on: the incidence of tuberculosis in their country of origin; The conditions encountered during your trip (physical stress and contact with infectious cases in camps and prisons); and their living and working conditions in the Country of immigration, including access to health and social protection services (International Organization for Migration, 2017). Tuberculosis has a profoundly detrimental economic impact on patients and their families, expenses for diagnosis and treatment, transportation to health centers, and wasted time work. (Stoptb, 2015).

Not like the other disease, Tuberculosis and poverty are associated with delayed treatment-seeking, late diagnosis, progression of the disease, delayed initiation of treatment, and inadequate follow up. Following a physical illness linked to poverty, widespread and subsequent malnutrition reduction in host resistance poor people probably have more extensive and severe forms of tuberculosis infection and are more at risk for poor treatment outcomes. TB infection itself has many consequences and impoverishes the poor (Hossain, 2012). In the future, the country aims to further accelerate the rate of decline.

Myanmar is on the path to universal health coverage, with a commitment to provide families with access to a range of quality essential health services by 2030. The National Strategic Plan provides roadmap for providing quality TB care and prevention service to the entire population, as an integral part of the country's movement towards Universal health coverage which is essential for Myanmar's development and economy Growth (Ministry of Health and Sports, 2018). Assessment of knowledge, attitude, and health-seeking practice among migrant in Yangon is essential to plan, implement, and evaluate advocacy, communication, and social mobilization work for the migrant's population. This can be improved the case detection rate. This study aims to assess the knowledge, attitude, and practice of migrants toward TB in the Hlaing Thar Yar Township.

1.2 Objective of the Study

The objective of the study is to assess the knowledge, attitude, and practice on transmission and treatment-seeking behaviours of tuberculosis among migrants in Myanmar.

1.3 Method of Study

This research was a cross-sectional descriptive study and conducted among migrants living in slum areas of Hlaing Thar Yar Township, Yangon City, Myanmar, from April 2019 to August 2019. The total collected sample is 219 in this study. Moreover, the secondary data utilized in this study are collected from the Publications, medical journals, and international/national studies through library, literature books, research paper, various websites.

1.4 Scope and Limitation of the Study

This study focuses only on Tuberculosis among internal migrant population who are particularly vulnerable to health inequalities. It aims to understand the level of Knowledge, Attitude and Practice about Tuberculosis by internal migrants which is one of the focus group need to approach by National TB control program. The interviews were conducted in Hlaing Thar Yar township, where is the highest interest population of this study. The study period is from April to August 2019. External Migrants issues do not cover in discussion of this study as mandatory pre-departure Tuberculosis screening activity carried out by the national program. Evidence in migrant focus health care system, including diagnosis, care, and support of Tuberculosis lacks in the current Myanmar situation.

1.5 Organization of the Study

This study is organized into five chapters. Chapter one is the introduction, and includes rationale of the study, objectives of the study, method of the study and scope and limitations of the study. Chapter two provides a literature review. Chapter three presents the overview of Tuberculosis control activities and the situation of internal migrants in Myanmar. Chapter four consists of a survey profile, survey design of the study, survey findings. This study finally concludes with Chapter five, which provide finding, discussion, and recommendations regarding the knowledge, attitude, and practice of TB among internal migrants in Hlaing Thar Yar Township.

CHAPTER II
LITERATURE REVIEW

The literature includes many factors that influence migration, migration effect health, seeking behavior on diagnosis, and treatment of Tuberculosis. These factors reflect on the outcome of the TB treatment, the occurrence of the drug-sensitive and resistance TB, and getting improvement of the Universal health coverage, one of the Sustainable Development Goals.

2.1 Transmission of TB

Tuberculosis is a disease caused by a bacterium called Mycobacterium tuberculosis, which is spread from person to person by air. Tuberculosis is a chronic lower respiratory disease, characterized by prolonged cough, low fever, weight loss, loss of appetite, general weakness of the body and can lead to death. Apart from that, it is a disease that weighs heavily on carriers, families, society and the health system.(Oladimeji, 2017). It can be fatal, if it is not appropriately treated and delayed treatment (CDC, 2013). Tuberculosis is a potentially serious infectious disease that mainly affects the lungs but can also damage other parts of the body (Mayo Clinic, 2019).

Tuberculosis does not spread by shaking someone's hand, sharing food or drink, touching bed linen or toilet seats, sharing toothbrushes and kisses. When a person breathes TB bacteria, the bacteria can settle in the lungs and start to develop. From there, they can move into the bloodstream to other parts of the body such as the kidney, spine and brain. Tuberculosis in the lungs or throat can be infectious. This means that bacteria can be passed on to other people. Tuberculosis in other parts of the body such as the kidney or spine, is usually not infectious. People with TB are more likely to transmit it to people they spend time every day. Family members, friends, colleagues, or classmates may be infected (CDC, 2013).

Tuberculosis is caused by Mycobacterium tuberculosis. Drops of 1 to 5 μm (drop nuclei) invisible to the naked eye, containing bacilli, form when a person with

pulmonary tuberculosis or larynx coughs, sneezes, laughs or talks. The nuclei of the bacilli-laden droplets remain suspended in the air for long periods, while the larger drops fall to the ground fairly quickly. An infection occurs when a susceptible person inhales one or more nuclei of droplets containing Mycobacterium tuberculosis, which is then housed in the alveoli of the lungs. Once in the lungs, bacilli can spread throughout the body, and tuberculosis can develop quickly after infection in most people, an immune response is generated in two to ten weeks of infection, limits the multiplication and spread of tuberculosis bacilli. More often, the bacilli remain dormant and viable, a condition called latent tuberculosis infection (LTBI). Persons with LTBI do not have symptoms of active TB and are not infectious. If the TB bacteria is activated in the body and multiplies, the patient, suffer the symptoms of TB depend on where *mycobacterium tuberculosis* infects in the body. When organism usually grow in the lungs (pulmonary TB), the symptoms of pulmonary TB are coughing that lasts for two or more weeks, coughing up with sputum or blood (mucus from deep inside the lungs), chest pain or pain with breathing, other symptoms of TB disease may include: Unintentional weight loss, fatigue, fever, night sweats, chills, loss of appetite. Symptoms of Tuberculosis in other parts of the body depend on the area affected. People who have latent TB infection do not feel sick, do not have any symptoms and cannot spread TB infection to others (CDC, 2013).

The rapid diagnosis of active pulmonary tuberculosis is a priority for tuberculosis control, both for treating the individual and for a public health intervention to reduce the spread in the community. Sputum smear microscopy test is the first TB test to be used in countries with a high rate of TB infection. The test is inexpensive and simple, and people can be trained to screen it relatively quickly and easily. In addition, the results are available within hours, so it is suitable in poor resource settings. If a person has had TB bacteria that has caused inflammation of the lungs, an abnormal shadow may be seen on a chest X-ray. Acute pulmonary TB can be easily seen on an X-ray. A routine chest X-ray cannot rule out extrapulmonary TB. New molecular tests, Gene X pert test is now available and used widely. It can also test for some types of drug resistance. Some people should get tested for TB infection because they have a higher risk for being infected with TB bacteria. People who have spent time with someone with TB disease, close contact with someone with an infectious disease, people from a country where TB is common, people who live or work in high risk settings hospitals, homeless shelters, prison, nursing homes and residential homes for

those with HIV and people who inject drugs, health care workers who care for patients at increased risk for TB, infants, children and adolescents exposed to adults are at higher risk for latent tuberculosis infection or Tuberculosis (CDC, 2013). Systematic screening for active TB among specific populations can also help to ensure early diagnosis, and reduce levels of under-diagnosis (World Health Organization, 2018).

The probability of transmission of TB depends on the infectiousness of the index patient, the environment, exposure and the susceptibility of a contact. Overcrowding and poor ventilation are some of the issues that were identified that can influence TB spread. For instance, the use of air-condition in rooms reduces rooms normal ventilation and does not allow air to be expelled from the room. In the circumstance where a TB infected person is in the room and expels the bacterium into the air while coughing transmission, can quickly occur (Oladimeji, 2017). The infection can spread until the person has completed at least two weeks of anti TB treatment and whose symptoms have improved. So, TB patients need to take the drugs exactly as prescribed if not, they can become sick again, and the TB bacteria that are still alive may become resistant to those drugs.

Tuberculosis (TB) is a global health problem for developing and developed countries and has recently become more complex due to the persistent aging of the population and the increase in drug-resistant strains. Drug-resistant tuberculosis is more difficult and more expensive to treat (CDC, 2013). First-line therapy for active tuberculosis (TB) has remained unchanged for nearly 40 years. Isoniazid, rifampin, pyrazinamide, and ethambutol for the initial two-month phase followed by isoniazid and rifampin for 4 to 7 months is the standard treatment for people at low risk for drug-resistant disease. Directly-observed therapy (DOT) remains the standard of care for pulmonary tuberculosis (MK, 2018) Efforts to control the burden of tuberculosis are continually faced with challenges, including misdiagnosis of cases and treatment factors, such as non-adherence to treatment due to the long treatment duration of up to 6 months in a cocktail of highly toxic drugs. The negative consequence of poor adherence is that it produces multidrug-resistant tuberculosis (MDR-TB), a more serious disease. It requires an even longer treatment time and significantly lower cure rates than drug-sensitive cases. (Oladimeji, 2017). The median cost per patient treated in 2017 was US$ 1224 for drug-susceptible TB and US$ 7141 for MDR-TB (World Health Organization, 2018).

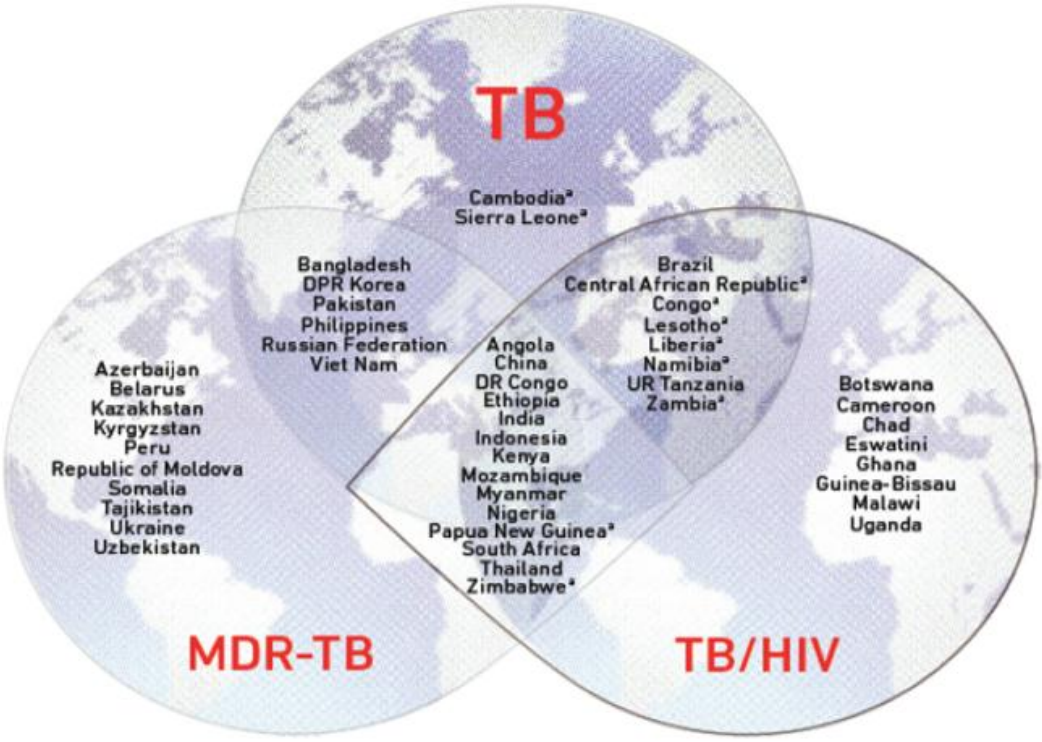
2.2 GlobalTB Epidemic

Globally, millions of people continue to contract tuberculosis every year. In 2017, tuberculosis caused approximately 1.3 million deaths (range: 1.2-1.4 million) in HIV-negative people and there were an additional 300,000 deaths due to tuberculosis (range 266,000 and 335,000) in people with HIV. The best estimate is that 10.0 million people (range: 9.0 to 11.1 million) developed tuberculosis in 2017: 5.8 million men, 3.2 million women, 1.0 million children and 230,000 children died of tuberculosis (even associated with tuberculosis) associated with HIV). There were cases in all countries and age groups, but in general, 90% were adults (age ≥ 15 years) (World Health Organization, 2018).

South-East Asia region counts for 41% of global TB burden in terms of incidence. It is estimated that about 5.4 million prevalence, 4 million incidence and about 460 000 people die of this disease annually, with most deaths from Bangladesh, India, Indonesia, Myanmar and Thailand. Six of the 30 high MDR-TB burden countries in SEA are namely Bangladesh, Korea, India, Indonesia, Myanmar and Thailand.

There were cases in all countries and all age groups, but in general, 90% were adults (age ≥ 15 years), 64% were men, 9% were people living with HIV (72% in Africa), and two thirds were in eight countries. The case in 30 countries with a high TB burden accounted for 87% of the cases worldwide. Only 6% of global cases occurred in the WHO European Region (3%) and the WHO Region of the Americas (3%). The severity of national epidemics varies considerably from country to country. In 2017, there were fewer than ten new cases per 100,000 population in most high-income countries, 150 to 400 in most of the 30 countries with high TB burden, and more than 500 in some countries, including Mozambique, Philippines and South Africa.

Figure (2.1) Countries in the Three High-Burden Country Lists for TB, TB/HIV and MDR-TB being Used by WHO during the Period 2016-2020, and their Areas of Overlap



Source: (World Health Organization, 2018)

Drug-resistant tuberculosis remains a public health crisis. The best estimate is that worldwide in 2017, 558,000 people (range: 483,000 to 639,000) developed rifampicin-resistant tuberculosis (RR-TB), the most effective first-line drug, and among 82 % had multidrug-resistant tuberculosis (MDR-TB). Globally, 3.5% of new tuberculosis cases and 18% of previously treated cases had MDR / RR TB. Among MDR-TB cases in 2017, it was estimated that 8.5% (95% confidence interval, 6.2-11%) had drug-resistant TB (TB-XDR). It is estimated that around 1.7 billion people, or 23% of the world's population, have latent TB infection and therefore are at risk of developing active TB in their lifetime. (World Health Organization, 2018). WHO estimate that close to 54 million TB deaths were averted between 2000 to 2017 because of improved disease prevention and management and service delivery, nevertheless, up to 1o million people continue to fall ill with TB every year (World Health Organization, 2016).

2.3 Migration

Migration is a term that encompasses a wide variety from movements and situations involving people of all walks of life and backgrounds. Migrants are a heterogeneous group. The International Organization for Migration defines a migrant as any person who moves to or has crossed an international border or into a state outside his or her usual place of residence, regardless of: (1) the person's legal status; (2) if the movement is voluntary or involuntary; (3) what are the causes of the movement; or (4) what is the length of stay (World Health Organization, 2018). Migration is intimately linked to geopolitics, trade and cultural exchange, and offers states, businesses and communities' opportunities to benefit greatly. Migration has helped improve the lives of people in countries of origin and destination and has provided opportunities for millions ofpeople worldwide to forge safe and meaningful lives abroad (International Organization for Migration, 2017).

Migration can be classified by political boundaries internal or international), movement of people (step, circular or chain) and decision-making approach, based on sociopolitical or developmental factors (voluntary or involuntary) (Alice Charles, 2017). Internal Migration is one of the most common coping strategies adopted by poor households to stabilize their livelihoods. Internal migration generally refers to the mobility of people from their region of origin (departure area) to a new place (destination area) for professional purposes but who remain in the country (Nyunt Nyunt Htay, 2018).

Table (2.1) Causes of Migration

Push factors (Compel people to migrate)	**Pull factors (Attract people to migrate)**
Economic - Unemployment - Rural poverty - Unstainable livelihood	**Economic** - Job opportunities - Wealth prospects - Industrial innovation - Specialized education
Sociopolitical - Political instability - Safety and security - Conflicts or threats - Slavery or bonded labor - Inadequate/limited urban services and infrastructure	**Sociopolitical** - Family reunification - Freedom - Integration and social cohesion - Food security - Affordable and accessible urban services
Ecological - Climate change - Crop failure/food security	**Ecological** - Abundance of natural resources - Favorable climate

Source: (Alice Charles, 2017)

By migrating, they seek to improve long-term prospects for themselves and their families. Their migration is motivated by interconnected structural and social factors. These are rural poverty, lack of viable job opportunities, differences between origin and destination, aspirations for modern work and / or a modern lifestyle, the desire to escape chronic debt and environmental change and conflict. The most frequently cited reason for migration among both men and women was to seek improvement in employment or income (International organization for Migration, 2019).

The current global estimate is that there were approximately 244 million international migrants worldwide in 2015, or 3.3% of the world's population. Of the 244 million international migrants recorded in 2015, 58% stay in developed nations, with 85 million originating from a developing nation (IOM, WMR, 2018). An international movement is becoming more and more achievable, in part thanks to the digital revolution, distance reduction technology and reduced travel costs. There are many factors that support migration, linked to economic prosperity, inequality, demography, violence and conflict and environmental change. While the vast majority

of people migrate abroad for work, family and educational reasons, many people leave their homes and countries for other compelling reasons, such as conflict, persecution and disasters. As a much larger phenomenon, internal migration affects the lives of far more people (an estimated 763million) but is given much less attention (Alice Charles, 2017). Overall, displaced populations, such as refugees and internally displaced persons (IDPs), represent a relatively small percentage of all migrants; however, they often capture and demand collective attention and action, as they often find themselves in very vulnerable situations. These are the people who often need more help. (International Organization for Migration, 2017).

The forming of the Association of Southeast Asian Nations (ASEAN) in 1976, including Philippines, Cambodia, Burma, Lao PDR, Viet Nam, Indonesia. Singapore, Malaysia, and Thailand (with Brunei joining later) aimed to initiate common political and, later, economic interests. The United Nations Development Programme (UNDP) estimates that, in South East Asia, migrants from sending countries are 13.5 million and in recipient countries 8.6 million. The largest migration flows are between five countries: Myanmar, Thailand, Cambodia, Vietnam and Malaysia although Lao People's Democratic Republic (PDR) and Yunnan are concerned as well. Five main corridors have been identified which the most massive are Myanmar to Thailand, Lao PDR to Thailand and Cambodia to Thailand. Some countries have experienced rapid economic growth, along with 'push' factors in others has driven to a surge in labor migration, both skilled and low-skilled workers, from neighboring countries. Looking among ASEAN countries, two main agendas arise. Primary sending countries are Cambodia, Lao PDR, Indonesia, Myanmar, Philippines, and Viet Nam, whereas primary host countries are Malaysia, Thailand, Singapore, and Brunei Darussalam.

The Universal Declaration of Human Rights proclaims that "all human beings are born free and equal in dignity and rights", that everyone has the right to all human rights and fundamental freedoms. All people "have the right to move and reside within the borders of each state and the right to leave any country, including their own, and to return to their country". The Constitution of the World Health Organization (WHO) also clearly supports the right to health: "The enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being, regardless of race, religion or its political, economic or economic convictions. "social status". This

right applies to all people, wherever they are and whatever their immigration status. (World Health Organization, 2018).

Ending the tuberculosis epidemic by 2030 is one of the goals of Goal 3, which is "to ensure healthy lives and promote well-being for all ages" (World Organization for health, 2016). To achieve the vision of the 2030 Agenda for Sustainable Development, in order to leave no one behind, it is imperative that the health needs of refugees and migrants be properly taken into account, as migrants and mobile populations encounter many barriers to accessing essential health services due to many factors, such as lack of inclusive health policies for migrants, language barriers, poor continuity of care due to mobility, lack of portability of health insurance or lack of social protection These disparities affect the well-being of migrants and host communities and pose challenges to achieving global health goals and health-related SDGs. (International Organization for Migration, 2018). Refugees and migrants can be among societies' most vulnerable members (World Health Organization, 2018). In 2008, the resolution from the World Health Assembly called on member states to construct policies and systems to approach migrants' health and promote greater multi-national and inter-sectoral collaboration. Despite international conventions and resolutions developed to protect the rights of refugees and migrants, many lacks accesses to health promotion, prevention and care, and financial protection to afford those services (World Health Organization, 2018).

Migration can also affect the health and well-being of family members who stay in communities of origin through remittances and "brain drain" (ie labor migration educated to better paid countries). On the one hand, remittances can improve the economic conditions of households receiving funds in the communities of origin and can have a positive effect on their health and well-being. Households receiving funds have better human development outcomes, including better access to health services, less crime and better education. The health of migrants can vary according to personal characteristics, individual and relational factors, social and community influences, living conditions and general socioeconomic, cultural and environmental conditions. (World Health Organization, 2018). Realities resulting a new social and political environment and from language barriers place high demands on the coping skills of first, and second-generation migrants, and their ability to adapt. The effects of the adaptation process, particularly on mental well-being, depend on, for instance, the social network of migrants, their gender, age, language aptitude, educational

qualifications and religious beliefs, as well as the rationale for migration and how they were received upon arrival at their destination (Alice Charles, 2017).

Health is considerably linked to the conditions and environment in which people are born, live and work. Migration, social structures and economic policies are other social determinants of health. In cities with large migrant populations living in slums, the living conditions of migrants and other social determinants increase the risks to physical, mental and social health. They are exposed to such risks not only during their departure from their countries of origin, but also before and after leaving them. Stays in refugee camps or the lack of awareness about local health services within the host city can lead to existential insecurity and can harm on the well-being of migrants. These situations can cause high levels of anxiety, resulting in, higher blood pressure, or can manifest indirectly through unsafe practices (drug abuse), inadequate resources to prioritize the prevention of diseases or to seek access to healthcare when required, or poorer adherence to medical counsel (Alice Charles, 2017).

They may also be at increased risk of noncommunicable diseases, which now are becoming major health issues for refugees and migrants. Many people with chronic conditions experience interruption of care when they move without medication or a health record. This means that some refugees and migrants may arrive with undetected health problems or be using inappropriate medication, giving rise to antimicrobial resistance. Refugees and migrants may come from areas where communicable diseases are endemic. They may be at risk of communicable diseases, particularly vaccine-preventable and food and waterborne diseases, due to the perils of their journeys, which are often long and exhausting. Access to immunization and continuity of care is more difficult when people are on the move (World Health Organization, 2018).

2.4 The Migration Process and TB Epidemiology

Migrants are particularly vulnerable to health inequalities, inadequate social protection, discrimination, human rights violations and stigma. Tuberculosis is a social disease and migration, as a social determinant of health, increases the morbidity and mortality associated with tuberculosis in migrants and surrounding communities.

It is increasingly evident that social and economic inequalities maintain the vulnerability of migrants to tuberculosis, as well as discriminatory policies in sectors unrelated to health, such as immigration, work and social protection. The absence of specific tuberculosis prevention and control strategies for migrants creates significant

obstacles to achieving the tuberculosis elimination goals in several countries of origin, transit and destination of migrants.

Risk factors – migrants are more exposed to TB infection due to overcrowded living and working conditions and greater vulnerability to HIV, malnutrition and substance use induced by marginalization and social exclusion. Delays in diagnosing tuberculosis in migrants are generally associated with difficulties accessing medical care, lack of education, poor health seeking behaviors, cultural beliefs, stigma and marginalization.

Social barriers – Migrants often lack access to good TB-related information on prevention, transmission and latent infections due to language barriers, as well as cultural beliefs. Fear related to stigma, lack of awareness of the right to health services and the low capacity for health-related spending in proportion to household income, as well as hostile health services for migrants, lead to reluctance to consult or to undergo treatment.

Economic costs – The high burden of tuberculosis-related morbidity and mortality among migrants can have negative economic effects at the family level for migrants and their families, at the social level. It results in loss of productivity and income in the industries that hire them and at the national government level due to the financial burden on the health systems of the countries of origin and destination, and the loss of remittances to the countries of origin. The presence of infectious diseases among migrants worries cities which, in some cases, have chosen to detect them. (Alice Charles, 2017). The circumstances and challenges affecting the health of refugees and migrants may be specific to each phase of the migration cycle (pre-departure, departure, transit, arrival and possible return). The country of origin may have a less developed health service or disrupted health systems due to protracted crises, which may contribute to precarious health conditions experienced since the onset of the travel.

At origin*:* the individual's state of health, availability and access to quality health systems, general socio-economic conditions and the emergence of disease epidemics, emergencies, particularly famines and political conflicts constitute health and tuberculosis risks for the migrant originally. Differences in criteria for detecting migrants in the pre-departure phase, such as screening and treatment protocols, links to post-arrival medical care and management of latent TB infections also influence the associated morbidity. with tuberculosis and the possible impact on public health in health systems during transit and at destination. Discriminatory practices, such as

refusal of a work permit because of a history of tuberculosis, are also a source of concern in the case of compulsory pre-departure medical examinations and a factor which can jeopardize good adherence to tuberculosis treatment.

During transit*:* Migratory trips affect the risk of tuberculosis for migrants, especially when the trip takes place in precarious conditions. Migrants in an irregular situation can be victims of violence and detained in poorly supplied and ventilated detention centers, often very close to other people with pre-existing infections. Migrants and asylum seekers who suffer physical and physiological violence may be reluctant to consult a doctor with public services or private health care providers because of their distrust. Modern migration patterns characterized by frequent and repeated movements between the country of origin and the country of destination of migrants also increase the likelihood of infection, transmission and interruption of treatment.

At destination*:* The integration of migrants into the health system of the host country (access, availability, affordability and acceptability), their living and working conditions and their socio-economic situation influence the risks of contracting and effectively treating tuberculosis. Difficulties in accessing housing, employment, medical care and other social services expose migrants to risk factors for tuberculosis. Migrants' wages are generally lower than those of their national counterparts, making medical care expenses an unusually high burden at the family level. Migrant health seeking behavior and cultural practices can affect their expectations and the use of TB services. Discriminatory practices, such as expulsion after a definitive diagnosis of tuberculosis, is another concern of migrants when they are in the country of destination.

Upon return*:* It is likely that migrants who lived in inadequate housing, had low wages and had limited access to medical care probably returned home in poorer health than they left. When migrants return to their place of origin with untreated tuberculosis, multidrug-resistant tuberculosis or complications thereof, the availability of standardized treatment and access to reliable health services becomes an essential factor in their health outcomes. It has profound implications for public health for their families and communities. This can place a financial burden on households if they do not receive adequate social and health protection upon return or if health systems are affected in their place of origin.

Migrants with specific legal and social status, such as workers, undocumented migrants, victims of trafficking and detainees, are particularly exposed to tuberculosis. Among migrant workers with legal status, their access to TB diagnosis and care is

contingent on their ability to access health services and medical insurance coverage, provided by the state or the employer. Irregular migrants face particular challenges such as fear of deportation which delay or limit their access to diagnostic and treatment services. Expulsion during treatment or poor adherence to treatment can lead to drug-resistant infection and increase the chances of spreading tuberculosis in countries of origin, transit and destination. Migrants in detention centers or victims of trafficking in transit or receiving countries often live in unsanitary and unsanitary conditions for extended periods of time, creating pockets of vulnerability to TB infection (International Organization for Migration, 2012).

Barriers to accessing health services may differ among countries. While actions to eliminate language barriers are essential, it is also necessary to broaden the analysis to incorporate cultural barriers. Other barriers include occupation and blockade of territories, high costs, discrimination, administrative hurdles, social isolation, the inability to affiliate with local health financing schemes, adverse living conditions (such as camps) that make seeking care difficult, a lack of information about health entitlements and a lack of recognition of professional qualifications. Refugees and migrants may also fear detection, detention, and deportation due to a lack of security arrangements to prevent health workers from reporting to immigration authorities (World Health Organization, 2018). Migrants, especially irregular and displaced people, often have limited access to appropriate health services and financial protection in health. Factors associated with health policies and the organization of health systems can constitute formal barriers to health service access (World Health Organization, 2018). The health outcomes of refugees and migrants may be worse than the host population as they are less likely to benefit fully from the host country's health system. While services provided to refugees and migrants should not be to the detriment of the local population, wherever possible parallel health systems for migrant use should be avoided (Alice Charles, 2017). Social isolation, barriers to access, discrimination, deplorable living conditions in refugee camps, and irregular utilization of health care are experiences common to refugees and migrants that can precipitate adverse health outcomes (World Health Organization, 2018).

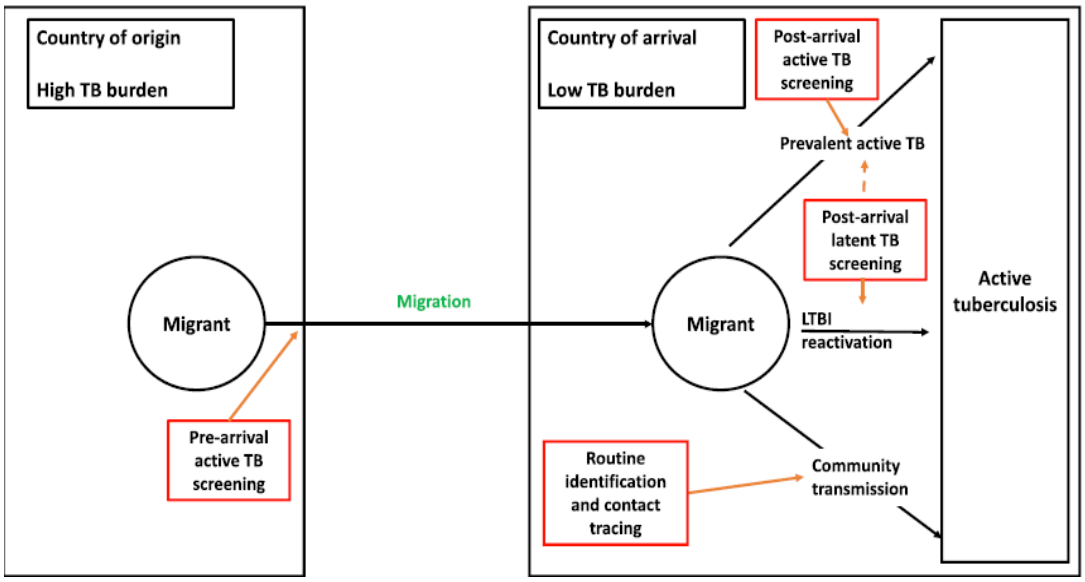
The health beliefs and health-seeking behavior of migrant groups may differ from those of host communities because of their needs and the differences in social norms, culture, and structure of the health systems in their communities of origin.

Low levels of health literacy, language differences, socio-cultural factors, stigma and perceptions of the health system can be informal barriers to accessing health services. (World Health Organization, 2018). The low level of knowledge about tuberculosis can lead to complications and deterioration in health status, increase transmission and delay health seeking behaviors, lack of adherence, leading to resistance to several drugs, failure of the Treatment and Complication of Illness and Death The fight against tuberculosis could be greatly improved if attitudes toward tuberculosis and behaviors related to seeking medical care were more taken into account when leading efforts to to educate and educate people about all aspects of tuberculosis. leadership behavior in efforts to educate and educate people about all aspects of tuberculosis. Different studies from different countries show the importance of the problem of poor knowledge of tuberculosis and the different socio-economic factors associated with poor knowledge of tuberculosis in different study populations.

The fight against tuberculosis in high-income countries has historically focused on the early identification and treatment of active tuberculosis with the monitoring of accompanying contacts. However, given the burden of tuberculosis cases in migrant populations, a discussion is underway on the best way to identify tuberculosis in migrant populations. In general, countries have generally focused on two methods: identifying active TB (either on arrival / after arrival, or increasingly before arrival in countries of origin) and, second, with conditional support from the WHO guide, through the identification of LTBI in migrants with a high burden of TB countries. Although economic health analyzes have shown that tuberculosis control in high-income countries would benefit from providing specific detection and treatment of LTBI to individual migrants from countries with high tuberculosis burden, with and barriers, such as the completion of suboptimal therapy must be addressed Ensure the effectiveness of the program.

The figure shows that the Schematic diagram of migration, factors determining how active incident tuberculosis occurs, and methods of screening migrants. As a by-product of post-arrival latent TB screening, some cases of prevalent active TB may be identified (Pareek, 2016).

Figure (2.3) Schematic Diagram of Migration



Source: Pareek, 2016

Early case detection depends on patients' perception about their needs of seeking healthcare. Consequently, it is essential to make people understand when and where they should seek healthcare. Health awareness allows people to assess symptoms, identify causes and routes of transmission, and become familiar with the availability of treatments and remedies. Likewise, knowledge and awareness of TB is essential in people with TB. The increase in knowledge will lead to overcoming some of the challenges of the fight against tuberculosis. While people may have a general idea of what TB is and how it is treated, gaps in knowledge, such as transmission, treatment and prevention, lead to delays in diagnosis and treatment. in many people living with tuberculosis. Delays in treatment occur for several reasons, such as lack of knowledge, lack of awareness of the importance of symptoms, negative social attitudes or different combinations of these three factors. Patients with in-depth knowledge of symptoms are less likely to see a doctor and be diagnosed. Uninformed patients are more likely to consult traditional healers and pharmacists than DOT providers, resulting in delays in diagnosis and proper treatment. (Nazrul, 2014).

CHAPTER III
MIGRANT SITUATION AND TUBERCULOSIS SITUATION IN MYANMAR

3.1 Myanmar Health Care Situation

Myanmar (Burma), officially the Republic of the Union of Myanmar, is located in Southeast Asia, with an area of 676,578 square kilometers. India and China are the borders of two countries, two of the world superpowers and Thailand. Laos and Bangladesh also share relatively small borders with Myanmar. Myanmar's location is close to the main shipping routes in the Indian Ocean, making trade an asset to the country. The location of the country can be considered highly strategic. Myanmar is the largest of the continental states of Southeast Asia. The country is geographically and culturally diverse, with 135 groups who speak more than 100 languages and dialects. Ethnic groups make up around 35-40% of the population and around 70% of the population live in rural areas (Lanjouw & Aye, 2013). According to the 2014 census data, the population is about 51 million people and show 54 million in 2017.

From 1962 to 2011, the country was under the socialist military government. The military junta was dissolved in 2011 after the general elections of 2010 and a civilian government was installed. Since gaining independence in 1948, the country has experienced one of the longest civil wars among the country's countless ethnic groups that have yet to be resolved. Given the long history of conflict in Myanmar, institutional, political and economic instability certainly contributed to Myanmar's poor economic development in 1990. As of 2016, Myanmar ranks 145 out of 188 countries in human development, according to the Human Development Index. HDI of Myanmar increased from 0.41 score in 1998 to 0.58 score in 2017, growing at an average annual rate of 1.79%. (Knoema, 2017). Now, Myanmar has reached a critical junction in its history. With the political, social and economic transition underway, the country has a real opportunity to develop its full potential (Ministry of Health and Sports, 2016).
Investing in health could not only help improve the general health of the population, but also stimulate the country's economic growth. Rendering the quality of essential

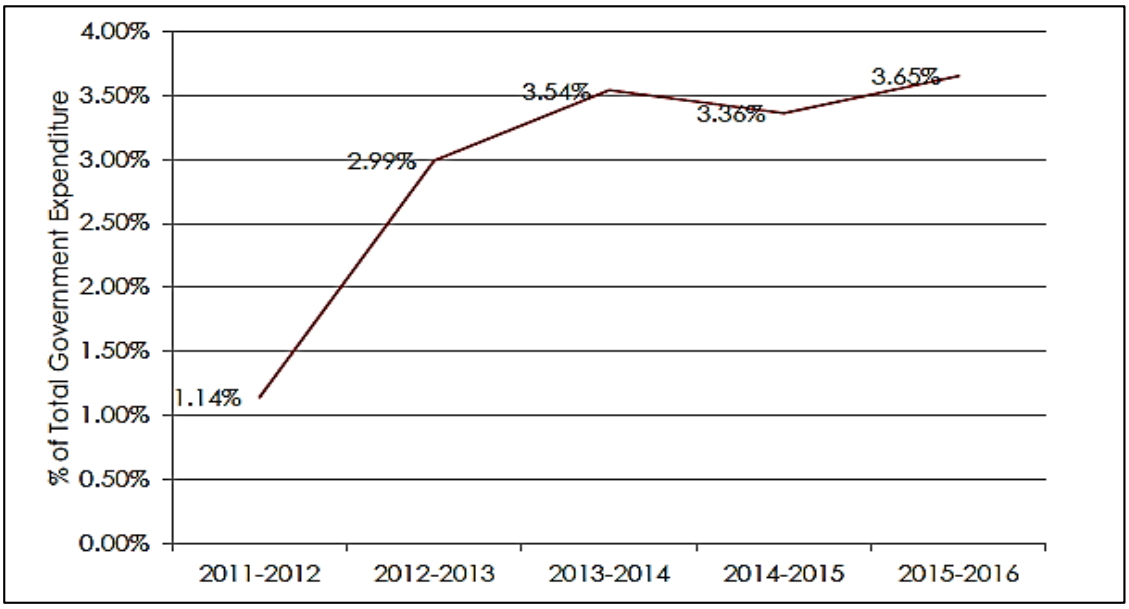
health services as well as the improvement of access are essential for the sustainable development of the country. After decades of institutional neglect of the health sector in Myanmar, recent efforts have been made to improve the health status of the population. (Ministry of Health and Sports, 2016). The Ministry of Health and Sports is the major player in the health sector both as a governing agency and as a provider of a conducive environment for rendering comprehensive promotive, preventive, curative, and rehabilitative health services (National TB Control Programme, 2012). Deputy Minister, who has two permanent secretaries, is assisted to Union Minister. Under their management, there are seven departments (Public health, Medical Services, Human Resources, Medical Research, Food and drug administration, Traditional Medicine, and Sports and Physical examination) are running.

The country's health care delivery system has not received enough attention over the years. This has led to a weak health infrastructure, an insufficient number of properly trained human resources and high personal costs, as well as questionable quality of health services. Limited supervision, leadership and responsibilities further compound these challenges. Specialized or tertiary care has long been favored, mainly in urban areas, to the detriment of essential primary care for the majority of the population.

Myanmar's health system is currently facing many challenges. These are related to the availability and distribution of inputs (for example, human resources, physical infrastructure, essential drugs and supplies, financial resources) and weaknesses in critical functions such as support supervision, guidance, supply chain, health information management system and public finance management. For the health financing, these efforts led to an increase in public health spending from 0.2% of GDP in 2009 (the lowest in the world) to just over 1% in 2014. Myanmar currently allocates 3.65% of its total budget in health, which is extremely low by global and regional standards. They have also led to visible improvements in the fight against communicable diseases: malaria, tuberculosis and HIV / AIDS. Despite these efforts, considerable challenges remain. Observation of the health status of Myanmar's population remains weak and does not compare favorably with other countries in the region. Life expectancy at birth, for example, is 64.7 years in Myanmar, the lowest of the ASEAN countries. The maternal mortality ratio (MMR) is the second highest among ASEAN countries with 282 deaths per 100,000 live births. Every year, around 2,800 women die during pregnancy or childbirth (2014 census). The under-five

mortality rate (U5MR) is 72 deaths per 1,000 live births, compared to 29 in Cambodia and 12 in Thailand, and the infant mortality rate is 62 per 1,000 live births, compared to whose 25 in Cambodia and 11 in Thailand (World Bank). Malnutrition is highly prevalent, with more than one-third of the children under the age of five stunted. Both HIV prevalence and TB incidence are the second-highest among ASEAN countries. The burden of disease associated with non-communicable diseases (NCDs) is increasing at alarming rates; it is estimated to already account for more than 40 percent of all deaths. Diabetes and hypertension are particularly prevalent and have so far, been largely neglected. Moreover, hidden behind national averages, there are great geographic, ethnic and socio-economic disparities.

Figure (3.1) Percentage of Total Government Expenditure on health



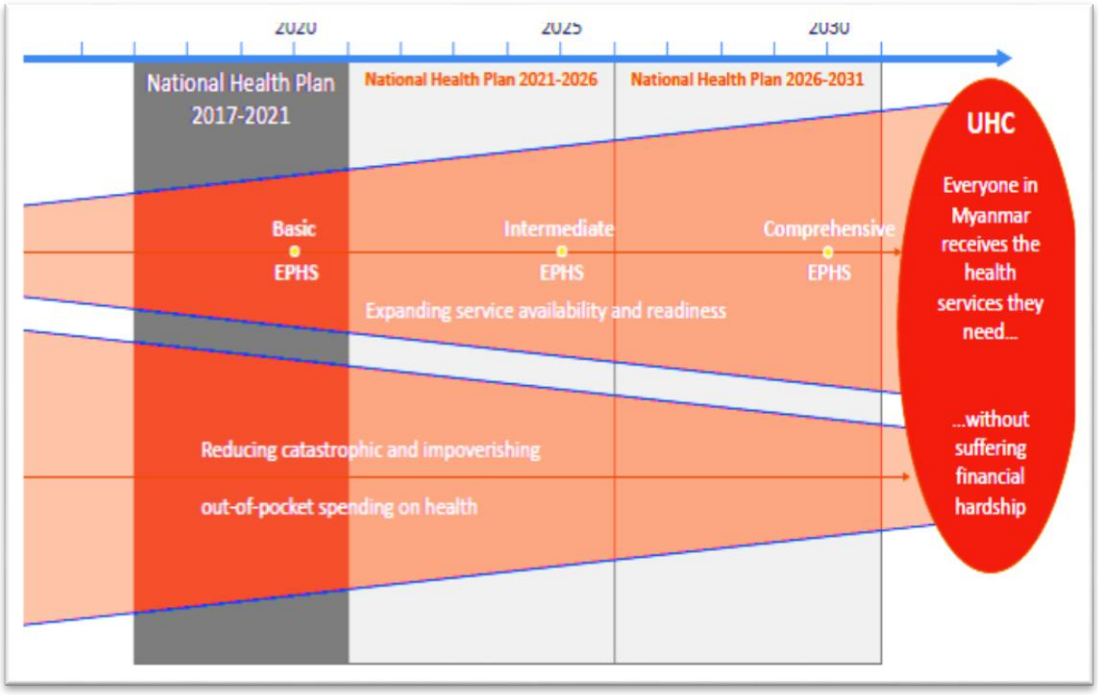
Source: Ministry of Health and Sports, 2017

Figure (2.4) shows that government spending on health as a percentage of total government expenditure.

Myanmar's political leadership has expressed its firm commitment to accelerate progress towards universal health coverage, which has also become a global priority. Universal health coverage (UHC) is defined as all people who have access to the necessary quality health services without encountering financial difficulties. The National Health Plan (NHP) aims to strengthen Myanmar's health system, improve equitable access to essential health services and quality interventions for the entire

population, and pave the way for universal health coverage. The main objective of the 2017-2021 NHP is to extend access to a set of essential health services (EPHS) to the entire population by 2020 and to increase financial protection. The NSP also aims to promote better alignment between programs (for example, by promoting more integrated training, supervision of joint support, better aligned referral mechanisms, a more streamlined health information system), among development partners, thanks to reinforced supervision and coordination, between the different types of providers, thanks to the commitment of ethnic health organizations (EHO), non-governmental organizations (NGOs), private providers to profit, etc. among implementing agencies, ensuring that projects and initiatives contribute to the achievement of NHP objectives.

Figure (3.2) National Health plan 2017-2021 and Universal Health Coverage



Source: Ministry of Health and Sports, 2016

Health, however, is not the sole responsibility of the Ministry of Health and Sports. Many of the health inequalities observed in the country are directly related to the social determinants of health (the conditions in which people are born, grow up, live, work and age), which are shaped by the distribution of money, of power and resources. Actions from sectors other than health are, therefore, equally important to

improve health and address systematic disparities. This requires close collaboration across Ministries and agencies (Ministry of Health and Sports, 2016).

3.2 Myanmar National TB Control Program

NTP started with a five-year plan in 1964-1965 with the support of WHO and the United Nations Children's Fund (UNICEF). NTP implementation began in 1966 and gradually expanded to cover six zonal TB centers in 1972. The program was eventually expanded to states and regions. In 2017, the National Tuberculosis Programme (NTP) was functioning with 17 Regional and State TB Centers with 404 B teams at district and the township levels. TB control activities are being implemented at township level by the Township Medical Officer, through integration with primary health care. From the start, NTP's standard treatment regimen was injection streptomycin and isoniazid. This regimen, used for 28 years, was replaced with short-course chemotherapy in 1994. In 1997, WHO recommended DOTS, and this strategy was introduced in 153 townships and gradually expanded (National TB Control Program, 2011) The NTP covered the 330 municipalities with the DOTS strategy in November 2003 and the 330 municipalities, including five new municipalities established in the Nay Pyi Taw Council region in 2011. The diagnosis of TB is mainly based on direct sputum microscopy, and 520 public and private laboratories were under it at the end of 2016. By the end of 2016, MDR-TB diagnosis, treatment, and care services were scaled up to all 330 townships and diagnostic of MDR, Gene X pert operational sites is 65 principally at Region/State and District TB centers. TB / HIV joint programs were implemented in seven municipalities in 2005, rising to 236 municipalities in 2015, reaching all 330 municipalities in 2016. The Public-Public Mix DOTS activities have been implemented in four general public hospitals since 2007 and gradually increase up to 25. Community-based TB care (CBTC) activities have been implemented by four local NGOs, and 9 INGOs implemented CBTC activities at the end of 2016. NTP introduced ACF activities in 2011and there are different ACF activities, mobile team activities, sputum collection centers, community-based TB care activities, initial home visit, and contact tracing by BHS. Active TB screening among ante-natal, post-natal mothers, and under five children was done by BHS during AN and PN care and attending under five clinics (National TB Control Programme, 2017).

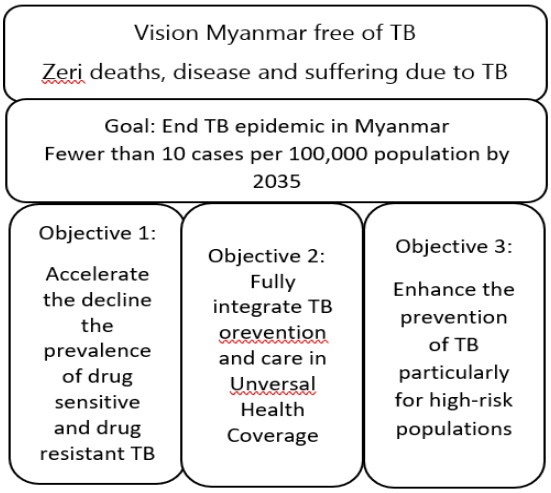
The NTP is led by a Programme Manager with the rank of Deputy Director, who reports to the Director (Disease Control). This position was assisted by 4 Assistant

Directors for the area of TB/HIV, MDR TB, Childhood TB, Community based TB care, and monitoring and evaluation. There are two TB Officers and one senior consultant Microbiologist for both Upper and Lower Myanmar, based in Mandalay and Yangon, respectively. Vertical TB staffs, Assistant Director (TB/Leprosy), State/ Region team leader, District team leader, TB Coordinator, and lab technicians are also present in seven states and seven regions.

To implement an effective tuberculosis and tuberculosis control strategy, the National Tuberculosis Control Program (NTP) applied the 3 in 1 principle: a coordinating body (Strategic Technical Group on Tuberculosis of the Myanmar Health Sector Coordinating Committee), a National Strategy Plan (NSP TB five years 2016-2020) and national monitoring and evaluation system (National M&E Plan 2016-2020). NTP has implemented five-year strategic plans which were systematically developed together with implementing partners.

The National Tuberculosis Program, in accordance with the National Strategic Plan(NSP) for TB (2016-2020), incorporates TB prevention programs. The NSP (2016-2020) is focused on WHO End TB Strategy, in line with Universal Health Coverage plan, and the National Strategic Plan for TB Control in Myanmar's Vision, Goal, Objectives, and Strategies is defined as follows: The vision is world Free of TB: less than 1 TB case/1 million population by 2050 (zero deaths, Zero disease and Zero suffering due to TB). Setting goal is End of the Global TB Epidemic: less than 10 TB cases/100,000 population by 2035. Thus, seeing the ultimate goal is to reduce TB mortality, morbidity, and catastrophic costs. Five specific objectives are to reduce the prevalence of all forms of tuberculosis by 25% by 2020, compared to the 2015 baseline (annual reduction of 5% in 2016-2020), to reduce the prevalence of MDR among the new TB cases by 20% 2020, compared to 2015 (reduction of 4% per year), to reduce tuberculosis mortality by 35% by 2020, compared to the baseline of 2015 (reduction of 7% per year) , to reduce the incidence of all forms of tuberculosis by 15% by 2020, compared to 2015 (3% per year), to reduce the affected families facing catastrophic costs due to tuberculosis by 2020 (target to be determined after baseline survey on catastrophic costs of tuberculosis [2015-2016])

Figure (3.3) National Strategic Plan 2016-2020



Vision, goal, targets, milestones

Vision:

A world free of TB(zero TB deaths, zero TB disease and sufferings

Goal: End the Global TB epidemic

	Targets			
	MILESTONES		SDG	END TB
	2020	2035	2030	2035
Reduction in no of TB deaths	35%	75%	90%	95%
Reduction in TB incidence rate	20%	50%	80%	95%
TB affected families facing catastrophic costs due to TB(%)	0%	0%	0%	0%

Source: (National Tuberculosis Programme, 2016)

Strategic Directions and Key Interventions of the National Strategic Plan (2016-2020)

Strategic Direction I: Integrated, Patient-centred Care and Prevention Interventions

Accelerate the appropriate diagnosis of TB

Identify and treat all forms of TB, among all ages and including drug-resistant and drug-sensitive

Prevent transmission and the emergence of active TB

Intensify targeted action(s) to reach marginalized and at-risk populations; health care workers, elderly, prisoners, urban and rural poor, miner, migrants, drug user, ethnic minorities, pregnancy, lactating mother, and under five children.

Implement a robust communication strategy, extending from policymakers to patient education

Engage all care providers, including NGOs and the private sector, inappropriate TB diagnosis and care

Promote and strengthen community engagement

Joint TB and HIV programming to enable decentralized and integrated services for TB and HIV

Strategic Direction II: Bold Policies and Supportive Systems Interventions

Secure human and financial resources for implementation of the NSP

Promote a coordinated and multi-sectoral response and policy development

Ensure inclusion of TB in UHC and broader economic development plans and activities

Ensure a stable and quality-assured supply of drugs, diagnostic tests, and commodities

Human resources for health

Strategic Direction III: Intensified Research and Innovation Interventions

Implement the prioritized research agenda

Enhance evidence-based program monitoring and implementation

3.3 Tuberculosis Situation in Myanmar

Tuberculosis (TB) is one of the major public health problems in Myanmar. The nation is listed among 30 countries with high burden of TB / TB-HIV / MDR-TB. WHO estimated that the prevalence of TB in 2016 was 361/100,000 population, and TB mortality was 47/100,000 population, according to the Global TB Report 2017. 191,000 new patients with TB are expected to grow. Prevalence of HIV seropositive among new TB patients was 8.5%, according to the sentinel surveillance conducted at 34 sites in 2016. The prevalence of multidrug-resistant tuberculosis (MDR-TB) was reported at 5% in new TB patients in the third national survey of drug-resistant tuberculosis conducted in 2012-2013. In 2016, 139,625 TB patients (all forms) were notified in Myanmar (case notification rate of 277 / 100,000 inhabitants), including 46,037 patients with bacteriologically confirmed TB cases. The PNT achieved a treatment success rate (RRT) of 87% among all tuberculosis cases in 2016 (National TB Control Programme, 2017).

Yangon Region has 4 Districts, including 45 townships with approximately 7.36 million populations. There were two townships conducting sputum collection activity and four decentralized microscopy centers. Reporting efficiency was 100%. The presumptive TB examination rate was 940/100 000 population, and the sputum

positivity rate was 13%. Implementing partners in Yangon Region included FHI 360, JICA, MMA, MMCWA, MDM, MHAA, MRCS, MSF-H, PSI, and World Vision.

Yangon Region achieved CNR (bacteriologically confirmed TB) of 166/100 000 population and CNR (all forms) 504/100000 population by NTP and partners. Childhood TB cases were 11% (2481/22709) in 2016. Statewide TSR for new bacteriologically confirmed cases was 83%, which was contributed by NTP and partners. Among all forms of TB cases, Loss to follow up rate, case fatality rate, and failure rate were 5%, 4%, and 1%, respectively.

As accelerated case finding activities, there was a 5% contribution to total TB cases notified. 54 Mobile teams found out 735 TB patients (3% contribution to state TB cases), including 186 bacteriologically confirmed TB cases, were detected and provided treatment by NTP.

In TB/HIV collaboration, approximately 88% of all registered TB cases were recorded for HIV status by NTP, and among them, 5% were HIV seropositive patients. Out of total TB/HIV co-infected cases, 66% received CPT, and 41% received ART. In 2016, there were 1575 MDR/RR cases notified by NTP (Gene Xpert) among 268 26 Gene Xpert tests done. Among them, 1368 (87%) could be put on treatment by NTP.

In terms of community-based TB care activity, MRCS implemented altogether in five townships finding out 91 TB cases (0.4% contribution to state TB cases) in 2016, with 45 bacteriologically confirmed cases found.

Challenges encountered in TB control in Yangon region were firstly low TSR in some INGOs and NGOs, which were to be corrected by measures to increase case holding activities for low TSR in the cohort review meetings, counseling training, and volunteer tracing. Secondly, the HIV test rate seemed unsatisfactory among TB patients by some partners, which were suggestive of how to increase HIV testing among these patients. Thirdly, there was a gap between TB case registration and Gene Xpert testing by both NTP and partners, and that would be reversed by advocacy and coordination meeting for the importance of Gene Xpert tests. Along with that, it was supposed to be reducing in increasing MDR-TB crisis in Yangon region by early case finding and effective management including recruitment of more community volunteers to help BHS for the purpose of MDR-TB patient and DOT provider ratio to be well managed and innovation of new ideas in real DOT. Last but not least, human resources were still main challenge (National TB Control Programme, 2017).

3.4 Migrant Situation in Myanmar

Migration is the consequence of a complex decision by an individual to move one position in another for finding a better life. There are multiple factors pushing the decision to make moving from place of origin to destination, which could be economic, social, security, and safety of daily life, disasters, and looking for well-being in areas of destination. Myanmar is a low-income country and the largest migration source in the Greater Mekong Sub-Region, sending an estimated 10 percent of its 50-million population abroad, mainly to Thailand and Malaysia, as well as other destinations in Asia and beyond. According to the 2014 Census, around 70 percent of those living outside Myanmar were reported to be living in Thailand, while 15 percent were in Malaysia. Other central destination countries include China (4.6%), Singapore (3.9%). 19.3 percent of the population is defined as lifetime migrants, more than 9 million, and overall, 3,359,342 individuals (7 percent) are recent migrants who moved in the five years before the Census.

Migration directly effect in the population growth and the socio-economic development in the country, especially in employment and provision of social services to the migrants and their families. The significant invasion of the migrant population to Yangon Region deteriorates the livelihood of the population in the city, including those migrants. The growing pattern is the migration stream from Yangon to other cities, and the urban-urban migration stream is rising. Yangon is the most urbanized city in Myanmar, accounting for about 35% of the urban population of the country. In 2014, 5.2 million people lived in the former capital, but by 2040, Yangon is expected to become a megacity of 10 million people.

According to one of the studies from "Capitalizing Human Mobility for Poverty Alleviation and Inclusive Development for Myanmar" (CHIME) project, Ayeyarwady was the only region where a majority of internal migrants (65%) moved from their region to Yangon. This is most likely due to the geographical proximity of Yangon to Ayeyarwady.

Table (3.1) Internal Destinations of Migrants by Region/State of Origin

	Origin			
Destination	Ayeyarwady	Mandalay	Rakhine	Shan (limited areas)
Within state/region of origin	23%	43%	46%	66%
Yangon	65%	28%	46%	13%
Other	12%	29%	18%	21%

(International Organization for Migration, 2018)

3.5 Activities of NGO, INGO on TB Control Activities

Health care utilization is the use of health services, whether it is clinical public health services or the services of medical care professionals. Health care utilization behavior is a continuum that ranges from using preventive services, such as getting immunization or early detection and screening tests, to elective surgery or involuntary hospitalization after and an injury (Encyclopedia of Public Health, 2002). Health care utilization is influenced by many different factors. Characteristics of individuals, populations at risk, the availability and quality of availability of services, economic factors such as health insurance, and additional access factors such as the location of health services and the availability of transportation.

Table 3.2 Implementing Partners and activities NGOs Area Coverage and activities

NGOs	Activities	Area Coverage
MMCWA(Myanmar maternal and child welfare association)	Community based TB care (providing the TB training to the volunteer who interest to work for TB control activities from community, delivering the health education via trained volunteer, referring to the diagnostic center, providing DOTS supervision, supporting the support like transportation	10 townships in Mon, 28 townships in Bago, 28 townships in Mandalay, 3 townships in Nay Pyi Taw, 2 townships in Kayin- 71 townships

MWAF(Myanmar women affairs federation)	Community based TB care	26 townships in, 9 townships in Shan(east), 2 townships in Kayah, 17 in Shan(north), 12 in Shan(south)and 10 in Tanitharyi – 76 townships
MMA(Myanmar Medical Association)	Public private mix DOTS activity Scheme I- referral Scheme III- TB case management	PPM- Scheme I-135 townships Scheme III -45 townships 1426 private practitioners
MRCS(Myanmar Red Cross Society)	Community based TB care	5 townships in Yangon, 2 townships in Nay Pyi Taw, 4 townships in Mandalay, 4 townships in Sagaing, 1 township in Magway, 3 townships in Shan(north) - 19 townships
MHAA(Myanmar health assistant association)	Community mobilization and empowerment, referral, nutrition support	48 townships in Yangon, Mandalay, Bago, Sagaing, Magway and Rakhine
Pyigyikhin	Multidrug resistant TB care and support	15 townships in Yangon
PSI(Population Service International)	Sun Quality Health Clinics Sun Quality Health Providers Sun Primary Health Providers Interpersonal communication Drug seller	199 townships 855 townships 57 townships 29 townships 33 townships

	MDR TB patient support	6 townships
MSF Holland	TB/HIV clinic	2 townships in Yango, 5 townships in Kachin, 2 townships in Shan(north), Pauktaw IDP camps
MSF Switzerland	TB HIV	Daewi
World Vision Myanmar	Community based TB control activities, MDR TB	1 township in Yangon, 1 township in Mon, 1 township in Kayah and 5 townships in Thanitharyi
The Union	Community based TB control activities MDR activities	8 townships in Mandalay, 2 townships in Magway, 2 townships in Shan(south), 1 township in Shan(north), 2 townships in Sagaing 15 in Madalay, 6 townships in Magway, 4 townships in Shan(south), 2 townships in Shan(north) and 6 townships in Sagaing
IOM (International organization for migration)	Community base TB activities, TB/HIV, MDR TB care and support	7 townships in Mon, 1 township in Kayin and 3 townships in Yangon
Malteser	TB case finding, diagnostic, DOT services, patient support and health education	2 townships in Rakhine and 2 in Shan(east)
AHRN (Asian Harm Reduction Network)	Focus on drug related with harm TB care and prevention TB/HIV and other blood born diseases ACF	2 townships in Shan, 7 townships in Kachin 4 townships in Kachin and 5 townships in Sagaing
CESVI	TB control activities	8 townships in Shan(north), 1 townships in Mandalay, 3 townships in Kachin
MDM (Médecins du Monde)	HIV/ TB/STI prevention and treatment, harm reduction activities	4 townships in Kachin

Medical Action Myanmar	Active case finding HIV related TB acitivties	8 townships in Kachin, 3 townships in Kayin, 3 townships in Kayah and 1 township in Thanitharyi, 1 township in Mon 3 townships in Yangon
Health Poverty Action	Community based TB and HIV control pilot activities	7 townships in Wa special region, 3 townships in Shan special region

(National TB Control Programme, 2017)

CHAPTER IV
SURVEY ANALYSIS

4.1 Survey Profile

Hlaing Thar Yar is situated at North Region of Yangon Division, near the Pan Hlaing river. It is bordered by Shwepyithar township to the north, Insein township to the east, Tontay township to the south and Htantabin township to the west. It is contiguous with Delta region in the South. The region lies between north latitude 16°47' and 20°12' approximately and between cast longitude 96°12' and 100°13'. It has an area of 26.01 square miles. There are total of twenty wards and nine villages. The population is about 687,867. The population density is 10,210.6 per square kilometer. There is average 4.5 total family members per household.

4.2 Survey Design

This study was cross-sectional study designed with quantitative approach to understand the knowledge, attitude and practice of Tuberculosis among internal migrants who living in slum area of Hlaing Thar Yar Township, Yangon region. It was done from May 2019 to June 2019. Data was collected by face to face interview by using semi-structured questionnaires.

4.2.1 Samplings Method

Selection of sample and sample size calculation made with the following formula

$$n = \frac{1.96^2 * 0.20 * 0.80}{0.07^2} * 1.7 = 213.24 \cong 213$$

n = estimated minimum sample size

Z = Standard level of significance, in this study, it is set 0.05. Therefore Z= 1.96

d = acceptable maximum allowable error = 7% = 0.07

$$\text{Deff} = \text{Design Effect} = 1.7 \frac{\text{Var (p) cls}}{\text{Var (p) srs}}$$

P = Rate of internal migrant worker in Myanmar, 2014 was 20% = 0.20

The households with migrants were selected by means of two-stage systematic random sampling procedure. Only nine wards and one village were selected cluster sampling with random number 830. Required numbers of migrant households were selected randomly. If the selected households have not matched with the criteria of the study, besides number was being selected.

4.2.2 Data collection method

The migrants who were staying in Hlaing Thar Yar Township for more than one month were interviewed face to face by using a structured questionnaire. The interviewer explained the objectives of the study and the migrants were requested to participate in the study. The migrants were assured that if the question is sensitive or if he/she does not want to answer the question he/she can quit the study anytime. Informed consents were collected from the migrants before preceding the interview. A structured questionnaire was used as a research instrument for data collection. The structured questionnaire included four parts, background information of interviewee, knowledge, attitude and practice.

4.2.3 Data Analysis

The data were entered in an excel spreadsheet in the password protected laptop and the student researcher can only access the data. The data were analysed by using SPSS software and descriptive statistical analysis using frequency and percentage for identifying an association between dependent and independent variables. Criteria for statistical significance was set with a p-value less than or equal 0.07.

4.2.4 Exclusion and Inclusion Method

Respondents are internal migrants who is more than 15 years old and living in study area at least one month.

4.3 Survey Findings

The socio demographic characteristic of surveyed participants presents in table (1).

Table (4.1) Socio-demographic Characteristics of Respondents

Variables	Characteristics	Number of Respondents	Percentage
Age	14 – 24	118	54
	25 – 34	45	21
	35 – 44	33	15
	45 – 54	15	7
	55 – 64	5	2
	>65	3	1
	Total	219	100
Sex	Male	112	51
	Female	107	49
	Total	219	100
Marital status	Single	129	59
	Married	80	37
	Divorced	6	3
	Widowed	3	1
	Separate	1	1
	Total	219	100
Education	Illiterate	8	4
	Read and write	34	16
	Primary level	33	15
	Middle level	84	38
	High level	55	25
	University/Graduate	5	2
	Total	219	100

Table (4.1) Socio-demographic Characteristics of Respondents (Continued)

Variables	Characteristics	Number of Respondents	Percentage
Occupation	Dependent	18	8
	Retire	1	1
	Manual worker	52	24
	Owner	13	6
	Government	6	3
	Company	67	31
	Others	62	28
	Total	219	100
family monthly income	<50000	1	1
	50000 – 100000	21	10
	100001 – 300000	157	72
	300001 – 500000	31	14
	500001 - 1000000	6	3
	> 1000000	3	1
	Total	219	100
Family number	≥ 5	106	48
	< 5	113	52
	Total	219	100

Source: Survey Data, 2019.

This part consists of six questions regarding age, sex, marital status, education, occupation, family income level and total household members of respondents. All questions reflect the personal information of the respondents while some factors relate indirectly as considerable factors what influence on TB diagnosis and getting care and support provided by national Tuberculosis control programme.

On summarizing of the age group, about half of participants 118(54%) were between 14 and 24 years followed by 45(21%) were between 24 to 34 years while more than 65 years old 3(1%). The data indicate that younger migrant more eager to migrate. According to the gender, one of the analyzing factors of TB, there is no difference and similarities between men and women, 51% and 49% respectively in this study. The

majority of participants were single 129(59%) while one third was married 80(37%). Data shows that single young men and women migrants are more likely to migrate than the men and women with family. It may also one of the ways supporting to the parents in the time difficulty or old age. Some family migrate by overlooking the better income and education of their family members.

Among 219 respondents, 84(38%) attained the middle school level of education, while 55(25%) had high school level education and 5(2%) of them were graduates. Education level is one of the health determinants factors. Individuals who attained middle and higher-level education are more than half as likely on migration. Education level will influence on finding the better paying job. One-third of respondents (30%) were company staff, mostly working in garment sector, while 52(23.7%) were manual worker and 6(2.3%) were government staffs. About three-fourth of per-capital income in each family earned between 100001-30000 kyats. Minimum income level is 50000-100000 kyats(9.6%) whereas only 1.9% earned more than 1,000,000 kyats. The study shows that most of the internal migrants earn as daily income range from 3000 to 10000 kyats.

According to family members, more than equal to 5 family members were 106(48.4%) when less than 5 family members 113(51.6%). The minimum was 1 and maximum was 11 family members. Much family members with limited space is prone to get the spread of Tuberculosis. Income and family members statistically associated with an affordability of paying health expenditure.

4.3.1 Migrant Information

This part tells about the flow of the migrants, cause of migrate and how long do they stay in current place.

Table (4.2) Migrant Characteristics of Respondents

Variables	Characteristics	Number of Respondents	Percentage
State / Region (Residence of respondents)	Ayeyarwaddy	109	49
	Bago	21	10
	Kachin	1	1
	Magway	18	8
	Mandalay	3	1
	Mon	8	4
	Rakhine	16	7
	Sagaing	3	1
	Shan	4	2
	Thanitharyi	1	1
	Yangon	35	16
	Total	219	100
Duration of stay(month)	Maximum	186	
	Minimum	1	
	Average	94 (over 7 years)	
Reason for migration	for work	142	65
	for education	12	5
	for health	1	0
	for family	62	28
	others	2	1
	Total	219	100

Source: Survey Data, 2019

Half of participants moved from Ayeyarwaddy region 108(49.3%) and then following by Yangon region. Only 1 (0.5%) from Kachin and Thanithary. Disaster, result of crop failure and landless household may cause migration from people of

Ayeyarwaddy. As they believed that they can find better life in Yangon, they do long stay in study area. Minimum month of stay is one-month duration and maximum stay is 186 months (over 15 years). According to reason for migration, most of respondents was migrant for work 142(65%) and 62(30.1%) was migrant for family but only 1(0.5%) was reason for health.

4.3.3 Tuberculosis Related Situation of the Respondents

This part describes about the present of TB patient in past and now in their family or work place.

Table (4.3) Tuberculosis Related Situation of the Respondents

Variables	Characteristics	Number of Respondents	Percentage
Previous history of TB patient in family	Yes	23	11
	No	180	82
	Don't Know	16	7
	Total	219	100
Previous history of MDR TB patient in family	Yes	3	1
	No	204	94
	Don't Know	12	6
	Total	219	100
Current TB patient in your family	Yes	2	1
	No	209	95
	Don't Know	8	4
	Total	219	100
Current MDR TB patient in your family	Yes	2	1
	No	207	95
	Don't Know	10	4
	Total	219	100
Current TB patient in your work	Yes	4	2
	No	101	46
	Don't Know	113	52
	Don't want to answer	1	0
	Total	219	100

Table (4.3) Tuberculosis Related Situation of the Respondents (Continued)

Variables	Characteristics	Number of Respondents	Percentage
Current MDRTB patient in your work	Yes	0	0
	No	97	44
	Don't Know	120	55
	Don't want to answer	2	1
	Total	219	100
Separate room need for TB patient	Yes	31	14
	No	164	75
	Don't Know	17	8
	Not relevant	7	3
	Total	219	100
Reason for not separate room for TB patient	No room	47	29
	Not enough space	55	33
	No need to stay for the patient in separate room	62	38
	Total	164	100

Source: Survey Data, 2019

Regarding to the previous history of tuberculosis in family members, 23(11%) had history of tuberculosis in family members. There were 1 aunty, 2 brothers, 1 brother in law, 7 fathers, 3 mothers, 4 sisters, 1 son and 1 wife and 3 respondents' patient itself. Among 23 patients, 2 sisters of the respondents were diagnosed as Multi drug resistant TB patient and received the MDR TB treatment. About 10% of the respondents had the relation with TB and 1% with MDR TB patient in past.

Similarly, only 2 (1%) of respondents had currently contact with tuberculosis patient among family members and 1 was father and one was respondent himself. According to current MDR TB history, there were only 2 respondents are noticing as contact with MDR patient, the relation with respondents is father and sister.

There were 4(2%) respondents are working together with TB patients. Luckily, there is no interviewee working together with MDR TB patients. TB transmission may

occur with exposure to an infectious contact often in the setting of household environments, but extra domiciliary transmission also may happen in close setting of work. Contact (living together and working together) people have prone to get TB via coughing, talking or sneezing of the patient. Patient expels the bacteria to the air and nearby people can infect by breathing. Some infection control measure needs to apply to cut out the transmission especially in sputum positive patients.

Asking on the question whether separate room is needed for TB patient, or not, 31(14%) answered “Yes” and 164(75%) “No”. Yes means respondents agree that TB patient need separate room and No provides contrariwise answer. Analyzing again on why they don’t place the patient in separate room, 47(29%) of the migrant household have no extra room in their house and 55(33%) have no enough space. But most more than one third of the migrant understand that no need separate room not only for patient but also for the rest of the family members as disease control measure.

4.4 Knowledge of Respondents Relating on Accessibility of TB Diagnosis and Treatment

Below table can conclude how migrants are getting the TB services which provide by national TB program, the reason on their choice, how much need to spend their time and money.

Table (4.4) Knowledge of Respondents on Health Providing Services

Variables	Characteristics	Number of Respondents	Percentage
Do you know place of TB treatment center here?	Yes	130	60
	No	89	40
	Total	219	100
Available known places for TB diagnosis and treatment	Hospital	143	
	Township health center	40	
	RHC	14	
	Private clinic/ hospital	66	
	Don't know	9	
	Others	10	

Table (4.4) Knowledge of Respondents on Health Providing Services

(Continued)

Variables	Characteristics	Number of Respondents	Percentage
Your place of choice for TB services	Hospital	143	67
	Township health center	15	7
	Rural health center	12	4
	Private clinic/ hospital	37	17
	Don't know	3	1
	Others	9	4
	Total	219	100
Reason for choosing TB treatment center	can save time	30	14
	can save money for transportation	50	23
	no charges apart some donation	139	63
	Total	219	100
mode of travel to go to TB treatment center	walking	28	13
	Bicycle/ Trishaw	27	12
	Motorcycle	34	16
	Car (Taxi / Own)	29	13
	Public bus	101	46
	Total	219	100
travelling hour to TB treatment center	Less than 30 minutes	100	46
	Between 30 min and 1 hour	73	33
	Between 1 hour and 3 hour	36	16
	More than 3 hour	10	5
	Total	219	100
Cost of travelling to TB treatment center	No cost	35	16
	< 1000 kyats	95	43
	1000 – 3000 kyats	73	33
	3000 – 10000 kyats	6	3
	> 10000 kyats	4	2
	Don't know	6	3
	Total	219	100

Source: Survey Data, 2019

Based on the survey finding,130(60%) of respondents knew the place of the TB treatment center in present place. Knowing the place of TB services is the fundamental information on getting TB diagnosis and treatment.

Migrants responded as frequency of 143 interviewee know that TB services can available in hospital, 66 of respondents answered that private clinic is the place for TB services, 40 replied that township health center and 9 of the respondents are needed to provide the place of TB services can available. Rest of the respondents also know other providing TB service place such as Htun clinic, confederating with MAM and service provided by UNICEF.

Most of them, 143(67%) answered their place of choice to investigate and treat TB patients at government hospital while two third 37(17%) at private clinic/hospital. 15(7%) respondents selected township health center while only 3(1%) didn't know where they should get TB services. 9(4%) respondents picked other place like Htun clinic, PSI and service provided by partner organization of national program.

According to reason for choosing TB treatment center, out of pocket payments for TB diagnosis and care is the main factor. In table (4.4), 139(63%) of migrants answered the place of choice depends on free of charges apart from some donation rather than the quality of service. There will be included direct health expenditures on diagnosis and treatment (consultation fees, Laboratory tests, X ray and drugs) and associated non-medical expenses (transportation and accommodation of patient and accompanies, nutrition supplement cost) under out of payment cost. While 50(23%) of migrants would like to save money for transportation cost and 30(14%) save time respectively.

Analyzed data shown in table (4.4), total number of 101(46%) out of 219 were using public transportation, public bus regarding to the mode of travel while going to TB treatment center. Study shows that most of the migrants relied on public transportation system, which is the cheapest transportation system among categories apart from walking. There is the risk of transmission increase with the various factors, poorly ventilated and congested road network. Followed by 34(16%) used of taking motorcycle, 29(13%) using taxi/ own car, 28(13%) by walking, then 27(12%) going with bicycle/ trishaw respectively. Time spent for transportation was partly influence by choosing the type of transportation system. Interviewee explored on travelling hour to health center, 100(46%) take less than 30 minutes to go to TB treatment center and 10(5%) said more than 3 hours.

Table (4.5) Source of Information about Tuberculosis

Variables	Characteristics	Percentage
Sources for getting TB information	Television	31
	Health workers	7
	Book/Journal/Newspaper/Poster and Pamphlet	16
	Relative/ Friend / Neighbor	22
	Radio	3
	Don't receive any information	13
	Spouse / Family members	5
	Others	1

Source: Survey Data, 2019

Analyzed data from table (4.5), the respondents provided the source of information. Arranging the most informative source that they collect to last; Television is standing in first position. Broadcasting short films, interview with policy maker, debating with key message will effective according to this finding. There was Health workers stands in second position. In community, affords of health workers should not neglect by showing this finding. On addition, health workers could extend their network up to patient household, including family members. Investing funding for health care workers use effectively and systematically, it will be the best informative center for mobile population. Using informative, educative and communicative (IEC) materials is also take part as main role in providing health information as it stands in third position. From the total 219 respondents, heard about tuberculosis. There should need to analyze in next study and emphasize for the group who didn't receive any TB information from any source.

4.5 Knowledge of Migrants on Tuberculosis

Table (4.6) Knowledge on Main Cause of Tuberculosis

Variables	Characteristics	Number of Respondents	Percentage
Main causes of Tuberculosis	Flu	18	8
	Due to Hardwork	19	9
	Inhaling Dust	24	11
	Drinking Alcohol	10	5
	Smoking	41	19
	Tuberculosis agent	92	42
	HIV	3	1
	DM	2	1
	Don’t know	5	2
	Others	5	2
	Total	219	100

Source: Survey Data, 2019

Knowledge towards TB from those study participants who had information about TB, half of ratio, 92 (42%) of the study participants stated that bacteria were the main agent in causing TB. Rest of the group showing, flu, due to hard-work, inhaling dust, drinking alcohol, smoking, HIV patient, Diabetic mellitus patient are the contributing factor to become TB patient for person who infected with TB by making the unsteady immune system.

Table (4.7) Knowledge on Transmission of Tuberculosis

	Characteristics	Number of Respondents	Percentage
Transmission of Tuberculosis	touch each other	22	9.8
	eating together	32	14.2
	via air	123	54.7
	via insect	5	2.2
	Don’t know	43	19.1
	Total	225	100

Source: Survey Data, 2019

From this table, data showed that half of the participants 123(54.7%) expressed their right knowledge, TB is spreading in air and inhale it nearby person, transmission occur by this way. There could be possible transmission, if the person touch/ eat the Tuberculosis bacteria. Biting insect to TB patient and then next person are very less likely to be infected. National program should consider the effective information channel by not neglecting the don't know group as it is not small group showing number 43(19.1%).

Table (4.8) Knowledge on Response upon Transmission of Tuberculosis

Variables	Characteristics	Number of Respondents	Percentage
Sign of Tuberculosis	cough	163	24.44
	low grade fever	100	14.99
	Sputum expectoration	70	10.49
	can't sleep	62	9.30
	loss of appetite	58	8.70
	loss of weight	52	7.80
	chest pain	41	6.15
	night sweat	34	5.10
	can't sleep	31	4.65
	back pain	28	4.20
	headache	12	1.80
	abdominal pain	12	1.80
	urination/defecation difficulties/changes	2	0.30
	Don't know	2	0.30
Condition for diagnosis	cough more than 2 weeks	175	79.9
	fever more than 2 weeks	99	45.2
	severe headache	16	7.3
	vomiting	11	5
	loss motion more than 2 weeks	3	1.4
	Don't know	3	1.4
	Don't want to test	1	0.5
suffer Tuberculosis every person transmit infection	Yes	97	44.3
	No	47	21.5
	Don't know	71	32.4
	Do not want to answer	4	1.8
	Total	219	100

Source: Survey Data, 2019

Interestingly, 24.44% of answer as number 163 knew that cough is the sign of Tuberculosis with the following of low-grade fever, sputum expectoration, loss of appetite, loss of weight, chest pain and night sweat. If the person has not feeling well, sleeping pattern can change or could not getting sound sleep. Data described that study population have sound knowledge on sign and symptom of Tuberculosis. As having good knowledge of TB sign and symptom, they were well informed the time for getting TB diagnosis. Time for diagnosis which established by national program is cough more than two weeks, fever more than two weeks, loss of weight and loss of appetite. There is the frustration of interviewee on question, every person might be suffered Tuberculosis if they were infected by disease. Although 97(44.3%) provided the Yes answer, 71(32.4%) provided Don't know answer.

Table (4.9) Knowledge on Transmission Particularly on Risk Population

Risk population	Under 5 years	84	38.4
	Old age	86	39.3
	DM patient	29	13.2
	low immune patient	111	50.7
	malnutrition	82	37.4
	Don't know	2	0.9

Source: Survey Data, 2019

By the risk of population, half of the answer showed that low immune system made more likely occurring of the TB. 111(50.7%). There is not much difference variation answer on under five age, old age and malnutrition patient. Based on analyzed data, relation of DM and TB topic, not well informative in study community should put in health education. As diabetic mellitus destroyed the immune system of person and lead to become TB.

Table (4.10) Action Based on Knowledge of TB Diagnosis

Variables	Characteristics	Number of Respondents	Percentage
Action if you doubt yourself for TB	Consult with DR	115	28.68
	take sputum check	134	33.42
	take CXR	84	20.95
	take blood Test	36	8.98
	take ultrasound	4	1.00
	Don't know what should do	28	6.98

Source: Survey Data, 2019

Nearly one third of answers would like to take sputum check if they doubt for having TB or not. They would also consult with Doctor for seeking the suggestion to do. Thirdly, they would like to take CXR for confirmation of the disease. All combining the answer right action to do for TB screening mentioned as over 80%. Some test would necessary to do for the extra-pulmonary TB patient.

Table (4.11) Knowledge on Site of Disease Occurrence

Variables	Characteristics	Number of Respondents	Percentage
Site of disease occurrence	Lung	175	79.9
	Liver	37	16.9
	Bone	34	15.5
	Brain	22	10
	Intestine	19	8.7
	Kidney	10	4.6
	Eye	2	0.9
	Don't know	2	0.9

Source: Survey Data, 2019

In above table, 80% of answers from respondents stated that lung is the site of disease that they know. Next common answer on site is liver. The disease site of bone, brain, intestine, kidney was more common than liver. Rare common answer under site is eye, received only getting two answers.

Table (4.12) Knowledge on Some Factors which Influence on Transmission

Variables	Characteristics	Number of Respondents	Percentage
Transmission to surrounding people	Yes	141	64.38
	No	31	14.16
	Don't know	45	20.55
	Don't want to answer	2	0.91
	Total	219	100
Disease can prevntable or not	Yes	151	68.96
	No	14	6.39
	Don't know	52	23.74
	Don't want to answer	2	0.91
	Total	219	100
Action to prevent the disease from others	patient will be kept in separate room	54	15.21
	will not talk with TB patient	63	17.75
	will apply mask when talking with TB patient	139	39.15
	will not eat together with TB patient	52	14.65
	will not sleep with TB patient	43	12.11
	Don’t know	4	1.13

Source: Survey Data, 2019

Above table stated that their thinking which will reflect on action to be prevented the disease. 141 of respondents might take actions even they choose wrong action like avoid talking or eat together as they thought disease can transmit to nearby people. Similar assumption, 151 of migrants answered Yes, Tuberculosis is the preventable disease by knowing disease nature and applying appropriate infection control measure. Respondents were well informed that applying mask can prevent some extent while being surrounded with TB patient.

Table (4.13) Knowledge on Anti TB Drug

Variables	Characteristics	Number of Respondents	Percentage
Thinking about curable of TB	Don’t know	56	25.57
	Yes	162	73.97
	Don’t want to answer	1	0.46
Next happening if not take treatment	Die	149	41.97
	can infect others	106	29.86
	MDR TB	39	10.99
	Lung cancer	31	8.73
	Don’t know	27	7.61
	Others	3	0.85
Period of treatment	Up to 6 months	136	62.1
	6 to 1 year	41	18.72
	up to 2 year	3	1.37
	more than 2 year	3	1.37
	don't know	33	15.07
	not relevant	3	1.37
	Total	219	100
Difficulties on migrate	Don’t know place for anti TB drug to take out	147	51.22
	Don’t have enough time	33	11.5
	Don’t have enough TA	37	12.89
	Couldn't not provide answer	37	12.89
	Don’t want to answer	4	1.39
	Difficult to go due to side effect	25	8.71
	Others	4	1.39
Anti TB can get free	Yes	158	72
	No	27	12.4
	Don't know	34	15.6
	Total	219	100
Drug side effect	loss motion	11	3.11
	fever	46	12.99
	loss of appetite	90	25.42
	vomiting	52	14.69
	itchiness	32	9.04
	red color urine	59	16.67
	joint pain	34	9.6
	Don't know	20	5.65
	Others	10	2.82

Source: Survey Data, 2019

Nearly 80% of respondents understood that TB is curable disease if they took properly the treatment. Individual who was being diagnosed as TB and didn't take the treatment, most of the provided answer from this study is die. Second most common answer is can infect to others. About 10% of answer, will suffer MDR TB could not happen if the patient had no experience with anti TB drug in past. 9% of answer could provide if the patient didn't seek the treatment, lung cancer will occur. There is no relation between TB and lung cancer, and also with TB treatment. Over 60% of respondents answered the right answer as the drug sensitive TB patient need to take six months to complete the course. According to current treatment course provided by national program, there need to take at least six months for drug sensitive TB case and twenty months for drug resistance TB case. As the interviewee were being internal migrant, study would like to explore their challenging that they face. Migrants are not familiar instantly in new place and they didn't know the place to take out the drug. 147 (51%) mentioned that this issue in this study. Study stated that migrants will not hesitate in getting treatment as they knew that anti TB drug can get free. 25% of answer indicated that loss of appetite is the most common side effect.

4.6 Attitude on Tuberculosis

Under this session, attitude of the respondents mentions with the degree of agree or disagree.

Table (4.14) Attitude on Tuberculosis

Characteristics	Strongly Agree	Agree	Natural	Disagree	Strongly Disagree
Everyone has responsibility for TB infection	28.9	61.9	7.8	0	1.4
Everyone can have TB	15.1	62.8	10.1	9.2	1.4
TB is a dangerous disease	17.4	49.1	15.1	10.6	6
Need cover whenever sneezing or coughing	28.4	62.8	6	1.4	1.4
Sneezing or coughing of TB patient is the main cause of TB infection	27.5	59.6	11		1.9
If you doubt for TB, go to diagnostic center	25.2	67.9	5		1.9
Take leave if TB occur	20.2	50.5	18.3	8.7	1.9
TB control activities need to response only for Ministry of health	14.7	43.1	19.7	17	4.1
Migrant TB patient need to complete in one place	28	54.1	13.8	1.8	1.9

Source: Survey Data, 2019

Attitude towards TB regarding to communities' attitude towards tuberculosis, 61.9% of study participants agreed that everyone has responsibility for TB infection and 62.8% agreed that everyone can be TB. 49.1% also agreed that TB is dangerous and serious for the community. 62.8% of study participants agreed that TB is can transmitted from human to human by sneezing and coughing but only 1.4% did not agree it and 59.8% agreed that it is a main cause of TB infection. 67.9% of them stated that if they doubt for TB, go to diagnostic center while only 0.5% was strongly disagreed. Half of respondents 50.5% took leave if TB occur. 43.1% agreed that TB

control activities was necessary to response only for ministry of health while 17% didn't agreed. Almost half (54.1%) of study participants agreed that migrant TB patient was necessary to complete in one place while 1.8% disagreed it.

4.7 Practices on Tuberculosis

Table (4.15) Practices on Tuberculosis

Variables	Characteristics	Number of Respondents	Percentage
Every time of sneezing and coughing use cover	Yes	75	34.4
	No	65	29.8
	Sometime	76	34.9
	Don't answer	3	0.9
	Total	219	100
Always keep handkerchief	Yes	39	17.9
	No	104	47.7
	Sometime	72	33
	Don't answer	4	1.4
	Total	219	100
If not in hand for handkerchief, apply hand for covering	Yes	104	47.7
	No	61	28
	Sometime	51	23.4
	Don't answer	3	0.9
	Total	219	100
If cough is over 2wk, go to GP clinic	Yes	81	37.2
	No	68	31.2
	Sometime	65	29.8
	Don't answer	5	1.8
	Total	219	100
When should take for TB diagnosis	Recommend by doctor	108	49.3
	suggested by someone	42	19.2
	appear s/s	64	29.2
	self	21	9.6
	others	5	2.3

Table (4.15) Practices on Tuberculosis (Continued)

Variables	Characteristics	Number of Respondents	Percentage
Used to go health center when cough more than 2-week	Yes	56	25.9
	No	59	27.3
	Sometime	60	27.8
	Don't answer	5	0.9
	Don’t cough more than 2-week	39	18.1
	Total	219	100
Reason for late diagnosis	no money for TA	51	23.3
	no money for test	54	24.7
	don't know place	60	27.4
	far	46	21
	others	34	15.5
Handwashing after cough	Yes	36	16.5
	No	118	54.1
	Sometime	65	29.4
	Total	219	100
Avoid crowded area while coughing	Yes	67	30.7
	No	88	40.4
	Sometime	62	28.4
	Don't answer	2	0.5
	Total	219	100
Take leave during sneezing or coughing	Yes	37	17
	No	127	58.2
	Sometime	53	24.3
	Don't answer	2	0.5
	Total	219	100

Source: Survey Data, 2019

Practice towards in the prevention of TB one-third 75(34.4%) stated that they would cover their mouth during coughing and sneezing if they had TB as a measure to prevent further spread of the disease and 39(17.9%) said “yes” to always keep

handkerchief and 104 (47.7%) said that if not in hand for handkerchief, apply hand for covering. 81(37.2%) said that if cough is over 2wk, go to GP clinic. 108(49.3%) said that when they took for TB diagnosis, recommend by doctor,42(19.2%) suggested by someone, 64 (29.2%) appear sign and symptom, 21 (9.6%) self. And also 56(25.9%) went to health center when cough more than 2 weeks but 59(27.3%) did not go.

According to the reason for late diagnosis, 51(23.3%) have not money for TA and 54(24.7%) have not money for test. Only 36(16.5%) did hand washing after cough and 67(30.7%) avoid crowded area while coughing and 37(17%) took leave during sneezing or coughing.

CHAPTER V
CONCLUSION

5.1 Findings

Survey data investigate the knowledge, attitude and practice of internal migrants on Tuberculosis. This study found that two third of the respondents are within the age of 14 to 34 years as younger migrants more likely to migrate for seeking better life. Equal distribution of respondents found out for gender. There are young people more likely to migrate than the head of household and old one as they have a will to support parents with their way. One of the determinant factors for migration is to get the job in new place. On seeking better job, education is one of the important factors. We can conclude that most of the migrants could pay attention on education in native by showing more than half of the respondents could pass middle level. So, they could do as company staff mostly in garment factory. Their daily wages have range from 3,000 to 10,000 kyats. This amount could spend only for one person with minimum rage, 3000 kyats and for one family should less than 4 with maximum range of daily income, 10,000 kyats. There should consider in spending for health with their daily income. This study revealed that education and income level are highly influence on health seeking behavior for study population, internal migrants.

Most of the migrants came from Ayeyarwaddy. Not owning/ losing land due to disaster, bad weather or crop failure are the pushing factor to migrate for people from Ayeyarwaddy. The migrants not likely return back to native although they do short return back during Myanmar holidays. The study disclosed that the reason of migration. Main reason is to find better job and living standard.

Over 10% of respondents have TB patients among family members in past and only 1% showed as one of their family members are under anti TB treatment. 4 respondents are working together with TB patients. TB transmission may occur with exposure to an infectious contact often in the setting of household environments, but extra domiciliary transmission also may happen in close setting of work. More than one

third of the migrant understand that no need separate room not only for patient but also for the rest of the family members as disease control measure.

Knowing TB services which provide by national Tuberculosis control programme is the basic needs to get diagnosis and treatment for low out of pocket health expenditure. Study could voice that most of migrants know the place of diagnostic and treatment center and choose the hospital to get the services. They also consider for the direct health expenditures like consultation fees, Laboratory tests, X ray and drugs and associated non-medical expenses like transportation and accommodation of patient and accompanies, nutrition supplement cost.

To raise the awareness about Tuberculosis, IEC materials take main role for community. Most of the respondents are watching television, stands as source of information in this study. Strength of health care worker need to consider reaching more information for migrant population.

Relating with knowledge of TB transmission, sturdy showed that most of the migrants could provide the correct answer on question of main cause of TB, condition for transmission and sign and symptom of disease. Here, study would like to highlight that there is the don't know group who need to pay attention at the ongoing time of End TB strategy. Based on their knowledge, they could make the right decision for time and place to go to the health diagnostic center. There, study stated that they could get the right action, consult with doctor, taking proper diagnosis (checking sputum and X ray). Survey could describe that low immune system prone to suffer the disease by seeing the answer of the migrants.

Migrants will response as disease preventable action as they were well informed that TB is curable and can transmit to nearby people. Studied population also well known that TB treatment can get free and will die if not taking the treatment. One point needs to emphasize is that Migrants are not familiar instantly in new place and they didn't know the place to take out the drug. Suffering side effect make the unpleasant desire to complete the treatment so need to pay attention to their hearing on side effect of anti TB drug.

Understanding on attitude, nearly 90 of respondents agreed on that everyone have responsibility for TB control while providing 50% of respondents stand for agree at the point of only Ministry of health need to response for TB control. 62.8% of migrants agreed on every can infect and TB is the dangerous disease. So, Cover need to apply by patients during sneezing or coughing as they realized the uncover coughing

is one of cause for TB infection. 75% of respondents accept to take leave if they suffer TB. Although migrants are always looking better job, they agreed on migrant TB patient should stay in current place till complete the treatment. Overall, most of the answer are under strongly agree and agree.

On describing the practice, although respondents provided the perception to apply cover during sneezing or coughing, 50% of respondents apply in practice as they don't have practice for keeping handkerchief or applying hand as cover. Seeking consultation or going clinic, about 60% of person with cough is more than two weeks used not to take action and take action sometime. One fourth of respondents reach to health center whenever cough is more than two weeks. Causes of late diagnosis are don't know place, no enough money for test, no enough money for transportation and distance. If coughing cover with hand, the causing agent of disease will stick on hand and reaching to the body by eating with that hand. So, Hand washing practice should be used to. But study indicate that half of the respondents have no practice on hand washing. Respondents would like to avoid the crowded area and take leave during unwell.

5.2 Recommendations

Based on the findings of this study, the following recommendation would like to make. Uplift of knowledge, attitude and practice will need concerted action from policy makers, health professionals and implementing partners. Recommendation aimed to provide the information to improve the procreative and administrative practice in order to increase the national investments in TB control activities. Every effort to promote the TB control activities should pay attention to these components and the recommendations from the findings of this study will thus go towards these aspects.

Migrant people have the increasing risk on occurrence of TB as migrant population live in slums, migrants' living conditions and other social determinants exacerbate the physical, mental and social health risks. This study indicates that family member of 10% of respondents are being diagnosed as TB. To validate the data, larger scale study in nation might be needed for the migrant population. In Myanmar, there is no reliable data of TB occurrence among migrant population. To promote accessibility of migrant data by putting one variable, migrant status in national health information system. To put the high priority for migrant population as migrant population is bigger and bigger nowadays and need to handle well migrant issue for development of the

country. To reduce inequity in access to the services provide by national TB control program and vulnerability to risks among migrants by expanding for free package for TB care among migrants might be effective for approaching End TB strategy. To cut out the disease transmission in study township, there might need great collaboration with other ministries, ministry of social welfare to include TB under covering of insurance and ministry of planning and finance to increase budget for health, and other non-government organizations.

The aim of recommending suggestion that can reduce the economic burden of TB on patients and their households, then leads to nation.

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တီဘီရောဂါနှင့် သက်ဆိုင်သော အသိပညာ၊ ခံယူချက်နှင့် ဗဟုသုတ ဆိုင်ရာ လေ့လာသည့် မေးမြန်းလွှာ
ကျေးရွာနှင့် ကောက်ယူသူ၏ အချက်အလက်

ဖြေဆိုသူနှင့် မိတ်ဆက်ခြင်း ၊ အသိအမှတ်ပြု လက်ခံသဘောတူမှု ရယူခြင်း

မင်္ဂလာပါ။ ကျွန်မက မစမ်းလတ်ဖြူ -------ပါ။ ကျွန်မ က ရန်ကုန်စီးပွားရေး တက္ကသိုလ်
ပြည်သူ့ရေးရာစီမံခန့်ခွဲမှု သင်တန်း က သင်တန်းသူ ဖြစ်ပါတယ်။ ယခုစာတမ်းသည်
မဟာဘွဲ့တန်း ဘွဲ့လွန်သင်တန်း အတွက်ကျမ်းပြုရန် ဖြစ်ပါသည်။ အထက်ပါ အကြောင်းအရာနှင့်
ပတ်သတ်၍ အကို/အမ ရဲ့ တီဘီရောဂါ နှင့် ပတ်သက်သော အသိပညာ ဗဟုသုတ၊
အတွေးအမြင်၊ အပြုအမူ များအားပူးပေါင်းပါဂင် ဖြေကြားပေးစေလိုပါသည်။
ပူးပေါင်းဆောင်ရွက်ခြင်းဖြင့် ရွှေ့ပြောင်းလုပ်သားများအတွက် ပိုမိုထိရောက်သော
တီဘီရောဂါတိုက်ဖျက်ရေးလုပ်ငန်းများ လုပ်ဆောင်ရန်ရည်ရွယ်ပါသည်။
ပူးပေါင်းဆောင်ရွက်ခြင်းသည် မိမိ သဘောဆန္ဒ အလျောက်သာ ဖြစ်ပြီး ဖြေကြားလို ခြင်းမရှိပါက
ဖြေဆိုမှု ကို အချိန်မရွေးပယ်ဖျက်နိုင်ပါတယ်။ အကို/အမ ရဲ့ ဖြေကြားပေးမှုကို လျို့ဝှက် သေချာစွာ
သိမ်းဆည်း ထားမည်ဖြစ်ပြီး ရလဒ်များကို အစီအရင်ခံစာတင်ပြရာတွင်လည်း
တစ်ဦးတစ်ယောက်ခြင်း အနေနှင့် ဖော်ပြမှု မပြုလုပ်ဘဲ အားလုံးပေါင်းခြုံ၍
တင်ပြသွားမည်ဖြစ်ပါသည်။ လူကြီးမင်းတို့၏ ထင်မြင်ယူဆချက်တွေက ကျွန်မ တို့အတွက်
တန်ဖိုးထား အလေးထားရမည့် အရာများဖြစ်ပြီး လူကြီးမင်း တို့ရဲ့ ပူးပေါင်းပါဂင်မှုကို
အထူးပင်ကျေးဇူး ဥပကာရတင်ရှိပါသည်။

၁. တွေ့ဆုံမေးမြန်းသည့် ရက်စွဲ _____/_____/____ (dd/mm/yy)
၂. တွေ့ဆုံမေးမြန်းသူ၏ အမည် .....
၄. အိမ်အမှတ်/ကျေးရွာ / ကျေးရွာအုပ်စု .....

အပိုင်း(က) ဖြေဆိုသူ၏ နောက်ခံအချက်အလက်များ
၁. အသက် (ပြည့်ပြီးအသက်ကိုရေးပါ) _____ _____ (နှစ်)

၂. လိင်

□ ကျား C မ □ အခြား

၃. အိမ်ထောင်ရေးအခြေအနေ

□ လူပျို/အပျို □ အိမ်ထောင်ရှိ □ အိမ်ထောင်ကွဲ □ မုဆိုးဖို၊ မုဆိုးမ □ အိမ်ထောင်နှင့်အတူမနေပါ
□ အခြား (ဖော်ပြရန်) ----------

၄. ပညာအရည်အချင်း

□ စာမတတ် □ ရေးတတ်/ ဖတ်တတ် □ မူလတန်း အဆင့် □ အလယ်တန်းအဆင့်

□ အထက်တန်းအဆင့် □ ဘွဲ့ရနှင့်အထက်

၅. အလုပ်အကိုင်

□ မိုခို □ ပင်စင် □ ကူလီ/ ကျပန်း □ ကိုယ်ပိုင်လုပ်ငန်း □ အစိုးရဝန်ထမ်း

□ ပြင်ပဝန်ထမ်း □ အခြား (ဖော်ပြရန်) ----------

၆. မိသားစုတလဝင်ငွေ

□ ၅၀၀၀ အောက် □ ၅၀၀၀ မှ ၁၀၀,၀၀၀ ထိ □ ၁၀၀၀၀၁ မှ ၃၀၀,၀၀၀ ထိ

□ ၃၀၀၀၀၁ မှ ၅၀၀၀၀၀ ထိ □ ၅ သိန်းကျော် မှ ၁၀ သိန်းထိ □ ၁၀ သိန်း အထက်

၇. မိသားစုဝင်ဦးရေ (တစ်မိုးအောက်အတူနေ) _____ ဦး

၉. မိသားစုထဲတွင်တီဘီရောဂါဖြစ်ဖူးသူရှိသလား။

□ ရှိ □ မရှိ □ မသိပါ □ မဖြေချင်ပါ

ရှိလျှင် အရေအတွက် .....ယောက်

ရှိလျှင် .....တော်စပ်ပုံ

၁၀. မိသားစုထဲတွင် ဆေးယဉ်ပါးတီဘီရောဂါဖြစ်ဖူးသူရှိသလား။

□ ရှိ □ မရှိ □ မသိပါ □ မဖြေချင်ပါ

ရှိလျှင် အရေအတွက် .....ယောက်

ရှိလျှင် .....တော်စပ်ပုံ

၁၁. မိသားစုထဲတွင်တီဘီရောဂါဖြစ်နေသူရှိသလား။

□ ရှိ □ မရှိ □ မသိပါ □ မဖြေချင်ပါ

ရှိလျှင် အရေအတွက် .....ယောက်

ရှိလျှင် .....တော်စပ်ပုံ

၁၂. မိသားစုထဲတွင် ဆေးယဉ်ပါးတီဘီရောဂါဖြစ်နေသူရှိသလား။

□ ရှိ □ မရှိ □ မသိပါ □ မဖြေချင်ပါ

ရှိလျှင် အရေအတွက် .....ယောက်

ရှိလျှင် .....တော်စပ်ပုံ

၁၃. တီဘီရောဂါ ဖြစ်သူကို အိမ်တွင် သီးသန့် အခန်းတွင် ထားပါသလား။

□ ထားပါသည် □ မထားပါ

မထားရသော အကြောင်းရင်း ပြောပြပါ။

□ အခန်းမရှိလို့ □ နေရာမလုံလောက် □ ထားရန် မလိုဟု သိသောကြောင့်

၁၄. အလုပ်ထဲတွင်တီဘီရောဂါဖြစ်နေသူရှိပါသလား။

□ ရှိ □ မရှိ □ မသိပါ □ မဖြေချင်ပါ

ရှိလျှင် အရေအတွက် .....ယောက်

ရှိလျှင် .....တော်စပ်ပုံ

၁၅. အလုပ်ထဲတွင်ဆေးယဉ်ပါးတီဘီရောဂါဖြစ်နေသူရှိပါသလား။

□ ရှိ □ မရှိ □ မသိပါ □ မဖြေချင်ပါ

ရှိလျှင် အရေအတွက် .....ယောက်

ရှိလျှင် .....တော်စပ်ပုံ

၁၆. ဒီနေရာကိုပြောင်းလာတာဘယ်လောက်ကြာပြီလဲ |__| နှစ် |__| လ

၁၇. ဘယ်တိုင်း၊ ပြည်နယ် က ပြောင်းလာတာလဲ _____ တိုင်း/ ပြည်နယ်

၁၈. မည်သည့်အတွက်ပြောင်းလာသနည်း။

□. အလုပ်အတွက် □ ပညာရေးအတွက် □ ကျန်းမာရေးအတွက်

□ မိသားစု နောက်လိုက်ပြောင်းရွှေ့ □ အခြား (ဖော်ပြရန်) ----------

၁၉. မိမိနေထိုင်ရာနေရာတွင် တီဘီရောဂါကုသ/ပြသ ရနိုင်သော နေရာကို သိပါသလား

□ သိပါသည် □ မသိပါ □မဖြေချင်ပါ

၂၀. ယခုနေထိုင်ရာနေရာတွင်တီဘီရောဂါကိုမည်သည့်နေရာတွင်စစ်ဆေး ၍ရသနည်း။(အဖြေတခုမ ကဖြေဆိုနိုင်သည်)

□ မြို့နယ်ပြည်သူ့ဆေးရုံ □ ဒေသန္တရ ကျန်းမာရေးဌာန □ ကျေးလက်ကျန်းမာရေးဌာန

□ ပြင်ပဆေးခန်း/ဆေးရုံ □ အခြား (ဖော်ပြပါ) ----------

၂၁. အထက်ပါ နေရာများမှ သင်သွားရမည်ဆိုလျှင် မည်သည့်နေရာသို့ သွားမည်နည်း ။ (အဖြေ ၁ ခု သာရွေးပါ)

□ မြို့နယ်ပြည်သူ့ဆေးရုံ □ ဒေသန္တရ ကျန်းမာရေးဌာန □ ကျေးလက်ကျန်းမာရေးဌာန

□ ပြင်ပဆေးခန်း/ဆေးရုံ □ အခြား (ဖော်ပြပါ) ----------

၂၂. မည်သည့်အတွက်ကြောင့် အထက်ပါနေရာ ရွေးချယ်ရသနည်း။

□ အချိန်ကုန်သက်သာ □ ငွေကုန်သက်သာ(ခရီးစရိတ်) □ အခမဲ့ကုသ

၂၃. အထက်ပါနေရာသို့ သင့်အိမ်မှ မည်သို့သွားသင့် သနည်း။ (စရိတ်၊ အချိန် သက်သာသောနည်း တခုသာ)

□ လမ်းလျှောက် □ စက်ဘီး/ ဆိုက်ကား □ ဆိုင်ကယ် □ ကား(တက်စီ၊ ကိုယ်ပိုင်ကား)

□ အများပြည်သူသုံး(လိုင်းကား)

၂၄. အထက်ပါနေရာသို့ သွားရန် အချိန်မည်မျှကြာသနည်း။

□ နာရီဝက်အတွင်း □ နာရီဂက် မှ တစ်နာရီ အတွင်း □ တစ်နာရီ မှ သုံးနာရီ အတွင်း

□ သုံးနာရီနှင့် အထက်

၂၅. အထက်ပါနေရာသို့ သွားရန် ခရီးစရိတ်မည်မျှ သုံးစွဲရသနည်း။

□ မကုန်ပါ □ ၁၀၀၀ ကျပ် အောက် □ ၁၀၀၀ မှ ၃၀၀၀ ကျပ်အတွင်း

□ ၃၀၀၀ မှ ၁၀၀၀၀ ကျပ်အတွင်း □ ၁၀၀၀၀ ကျပ် နှင့် အထက်

၂၆. တီဘီရောဂါနှင့်ပတ်သတ်၍သတင်းအချက်အလက်များကို ဘယ်ကရပါသလဲ။(အဖြေတခုမကဖြေဆိုနိုင်သည်)

□တီဗွီကြည့်ရာမှ □ ရေဒီယိုနားထောင်ရာမှ □.စာအုပ်/ဂျာနယ်/သတင်းစာ/ပိုစတာနှင့် လက်ကမ်းစာစောင်မှ

□.ကျန်းမာရေးစောင့်ရှောက်မှု ပေးသူမှ □ခင်ပွန်း/ မိသားစုဝင်မှ

□ဆွေမျိုး/သူငယ်ချင်း/အိမ်နီးနားချင်းမှ

□သတင်းအချက်အလက်မရရှိဘူးပါ □အခြား(ဖော်ပြပါ)_____

အပိုင်း (ခ) တီဘီရောဂါနှင့်ပတ်သတ်၍ဗဟုသုတဆိုင်ရာ မေးခွန်းများ

၁. တီဘီရောဂါ ဖြစ်ပွားရသည့် အဓိက အကြောင်းအရင်း ကို ပြောပြပါ။

□အအေးမိခြင်း □အလုပ်ပင်ပန်းခြင်း □ဖုန်ရှုမိခြင်း

□အရက်သောက်ခြင်း

□ဆေးလိပ်သောက်ခြင်း □တီဘီပိုးကြောင့် □အိပ်ချိုအိုင်ဗို ရောဂါရှိသူများ □ဆီးချို ရောဂါရှိသူများ

□မသိပါ □. အခြား (ဖော်ပြပါ)----------

၂. တီဘီရောဂါသည်မည်ကဲ့သို့ကူးစက်သနည်း။

□ တယောက်နှင့် တယောက် ထိတွေ့ခြင်း □ ပန်းကန်ခွက်ယောက်များအတူတူစားသုံးခြင်း □ လေမှတဆင့်

□ အင်းဆက်ပိုးမွှားမှတဆင့် □ မသိပါ □ အခြား (ဖော်ပြပါ)----------

၃. သင်ကြားဖူးသောတီဘီရောဂါလက္ခဏာများကို ပြောပြပါ။ (အဖြေတခုမကဖြေဆိုနိုင်သည်)

□ တင်ဒေဒွေဖျားနာခြင်း □ ဗိုက်အောင့်ခြင်း □ အစားပျက်ခြင်း □ အိပ်မပျော်ခြင်း

□ မောပန်းလွယ်ခြင်း □ ချောင်းဆိုးခြင်း □ ခေါင်းကိုက်ခြင်း □ သလိပ်ထွက်ခြင်း

□ ရင်ဘတ်အောင့်ခြင်း □ ကိုယ်အလေးချိန်ကျခြင်း □ ဆီး၊ ဝမ်း မမှန်ခြင်း □ ကျောရင် အောင့်ခြင်း

□ ညဘက် ခေါင်းချွေးထွက်ခြင်း

၄. မည်သည့်အခြေအနေတွင် တီဘီရောဂါ စစ်သင့်သနည်း။ (အဖြေတခုမကဖြေဆိုနိုင်သည်)

□ ၂ ပတ်ကျော် ဖျားနာခြင်း □ ၂ ပတ်ကျော် ချောင်းဆိုးခြင်း □ ၂ ပတ်ကျော် ဝမ်းသွားခြင်း

□ မခံနိုင်အောင်ခေါင်းကိုက်ခြင်း □ အန်ခြင်း

၅။ တီဘီရောဂါ ကူးစက်ခံရတိုင်း တီဘီရောဂါ ဖြစ်ပွားပါသလား။

□ ဖြစ်ပါသည် □ မဖြစ်ပါ □ မသိပါ □ မဖြေလိုပါ

၆။ တီဘီရောဂါသည် အောက်ပါလူများတွင် ကူးစက်ခံရလျှင် ရောဂါ ဖြစ်လွယ်သည်။ (အဖြေတခုမကဖြေဆိုနိုင်သည်)

□ ၅ နှစ်အောက် ကလေး □ အသက်ကြီးသူများ(အဘိုး အဘွား) □ ဆီးချိုဝေဒနာရှင် □ ကိုယ်ခံအားနည်းနေသူများ □ အာဟာရချို့တဲ့သူများ

၇. တီဘီရောဂါရှိ မရှိ သိရှိရန် မည်သို့ဆောင်ရွက်သင့်သနည်း။ (အဖြေတခုမကဖြေဆိုနိုင်သည်)

□ ဆရာဝန်နှင့်ပြသင့်သည် □ သလိပ်စစ် □ ဓါတ်မှန်ရိုက် □ သွေးစစ်

□ Ultrasound □ မသိပါ □ အခြား (ဖော်ပြပါ)----------

၈. တီဘီရောဂါသည် ခန္ဓာကိုယ်၏ မည်သည့်နေရာတွင် ဖြစ်သည်ဟု ကြားဖူးပါသလဲ။ (အဖြေတခုမကဖြေဆိုနိုင်သည်)

□ အသည်း □ အဆုတ် □ ဦးနှောက် □ မျက်လုံး □ အူ □ အရိုး □ ကျောက်ကပ်

၉. တီဘီရောဂါ သည် ကုသ၍ ပျောက်ကင်းနိုင်သည်ဟု ထင်ပါသလား။

□ မသိပါ □ ပျောက်ကင်းနိုင်သည်ဟု ထင်ပါသည် □ မသိပါ □ မဖြေလိုပါ

၁၀. တီဘီရောဂါ သည် အနီးရှိလူများကို ကူးစက်နိုင်သည်ဟု ထင်ပါသလား။

□ ထင်ပါသည် □ မထင်ပါ □ မသိပါ □ မဖြေလိုပါ

၁၁. တီဘီရောဂါသည်တခြားလူများကိုမကူးစက်အောင် ကာကွယ်၍ရနိုင်သည် ဟု ထင်ပါသလား။

□ ထင်ပါသည် □ မထင်ပါ □ မသိပါ □ မဖြေလိုပါ

၁၂. မိမိကို မကူးစက်စေရန် မည်သို့ကာကွယ်ရသည် ဟု ထင်ပါသလား။(အဖြေတခုမကဖြေဆိုနိုင်သည်)

□ တီဘီလူနာ ကို သီးသန့်ထားရမည်။ □ တီဘီလူနာနှင့် စကားမပြောရပါ

□ တီဘီလူနာ နှင့် စကားပြောလျှင် နာခေါင်းစည်းတပ်ထားသင့်သည် □ တီဘီလူနာ နှင့် အတူစားသောက်ခြင်းမပြုလုပ်ရပါ □ တီဘီလူနာ နှင့် အတူ ညမအိပ်ရပါ

၁၃. တီဘီရောဂါ မကုသလျှင် မည်သို့ဆက်ဖြစ်မည်နည်း။ (အဖြေတခုမကဖြေဆိုနိုင်သည်)

□ သေဆုံး □ အခြားသူသို့ကူးစက်နိုင် □ ဆေးယဉ်ပါးတီဘီ/ ဆေးမတိုးတီဘီ □ အဆုတ်ကင်ဆာ

□ မသိပါ □ အခြား (ဖော်ပြပါ) ----------

၁၄. တီဘီရောဂါသည် အနည်ဆုံး မည်မျှ ကြာအောင် ကုသရသည်ဟု ထင်ပါသလဲ။.....

၁၅. တီဘီရောဂါ ဆေးကုသမှုခံယူနေစဉ်အတွင်း တနယ်တကျေးသို့ ရွှေ့ပြောင်းသွားပါက မည်သည့်အခက်အခဲများကို ရင်ဆိုင်ရမည်ဟု ထင်ပါသနည်း။ (အဖြေတခုမကဖြေဆိုနိုင်သည်)

□ ဆေးယူရမည့်နေရာ ကို မသိခြင်း □ ဆေးယူရန် အချိန်မရှိခြင်း □ ဆေးယူရန် သွားလာစရိတ်မရှိခြင်း

□ မဖြေတတ်ပါ □ မဖြေလိုပါ □ ဘေးထွက်ဆိုးကျိုးများအတွက် ပြန်ပြရန်ခက်ခဲ □ အခြား .....

၁၇. တီဘီဆေးသည် အခမဲ့ ရသည်ဟု ကြားဖူးပါသလား။

□ ကြားဖူးပါသည် □ မကြားဖူးပါ □ မသိပါ □ မဖြေလိုပါ

၁၈. သင်ကြားဖူးသော တီဘီဆေးနှင့် ပတ်သတ်သော ဘေးထွက်ဆိုးကျိုးကို ပြောပြပါ။
(အဖြေတခုမကဖြေဆိုနိုင်သည်)

□ ဝမ်းသွား □ ဖျားနာ □ အစားအသောက်ပျက် □ အော့အန် □ ယားယံ

□ ဆီးအနီရောင်သွား □ အဆစ်ရောင် □ အခြား (ဖော်ပြပါ) ----------

အပိုင်း (၈) တီဘီရောဂါနှင့်ပတ်သတ်၍ ခံယူချက်ဆိုင်ရာ မေးခွန်းများ

		၁	၂	၃	၄	၅
		လုံးဝ သဘောတူပါသည်	သဘောတူပါသည်	သဘောတူသည် လည်းမဟုတ် မတူသည်လည်းမဟုတ်	သဘော မတူပါ	လုံးဝ သဘော မတူပါ
၁	**တီဘီရောဂါ မပြန့်ပွားရန် လူတိုင်းတွင် တာဝန်ရှိသည်။**					
၂	**လူတိုင်းတွင် တီဘီရောဂါ ဖြစ်ပွားနိုင်သည်။**					
၃	**တီဘီရောဂါသည် ကြောက်စရာကောင်းသော ရောဂါ ဖြစ်သည်။**					
၄	**နာရေး၊ ချောင်းဆိုးလျှင် ပါးစပ်နှင့် နာခေါင်း ကိုအုပ်၍ ဆိုးသင့်သည်။**					
၅	**တီဘီလူနာများမဆင်မခြင် ချောင်းဆိုးခြင်း၊ သလိပ်ထွေးခြင်းတို့သည် အခြားသူကို ကူးစက်စေသော အကြောင်းအရာဖြစ်သည်။**					
၆	**အကယ်၍ သင့်တွင် တီဘီရောဂါဖြစ်သည်ဟု သံသယရှိလျှင်**					

	နီးစပ်ရောကျန်းမာရေးဌာန သို့စစ်ဆေးမှုခံယူရန် သွားသည်။					
၇	တီဘီရောဂါဖြစ်လျှင် တခြားသူများကို မကူးစက်စေရန် မဖြစ်မနေ အလုပ်မှ အနားယူသင့်သည်။					
၈	တီဘီရောဂါ ထိန်းချုပ်ရေးလုပ်ငန်းများ သည် ကျန်းမာရေးဌာန တွင်သာတာဝန်ရှိသည်။					
၉	ရွှေ့ပြောင်းလုပ်သားများ သည် ဆေးကုသမှု ပြီးစီးသည်အထိ တနေရာထဲတွင် ဆေးကုသမှု ခံယူသင့်သည်။					

အပိုင်း (ဃ) တီဘီရောဂါနှင့်ပတ်သတ်၍ အပြုအမူဆိုင်ရာ မေးခွန်းများ

၁. နာချေ ချောင်းဆိုးလျှင် နာခေါင်းနှင့်ပါးစပ်ကို အမြဲအုပ်၍ ဆိုးလေ့ရှိသည်။

□ ရှိပါသည် □ မရှိပါ □ တခါတရံ ရှိပါသည် □ မဖြေချင်ပါ

၂. နာချေ ချောင်းဆိုးလျှင် အုပ်ဆိုးရန် လက်ကိုင်ပဝါ အမြဲ ဆောင်လေ့ရှိသည်။

□ ရှိပါသည် □ မရှိပါ □ တခါတရံ ရှိပါသည် □ မဖြေချင်ပါ

၃. လက်ကိုင်ပဝါ မပါလျှင် လက်နှင့်အုပ်ဆိုးလေ့ရှိသည်။

□ ရှိပါသည် □ မရှိပါ □ တခါတရံ ရှိပါသည် □ မဖြေချင်ပါ

၄. ၂ ပတ်ကျော် ချောင်းဆိုးတိုင်း ပြင်ပဆေးခန်း သို့ သွားလေ့ရှိသည်။

□ ရှိပါသည် □ မရှိပါ □ တခါတရံ ရှိပါသည် □ မဖြေချင်ပါ

၅. သင်မည်သည့်အချိန်တွင် တီဘီရောဂါ ရှိ မရှိ စစ်ဆေးမှုခံယူမည်နည်း။

□ ဆရာဝန်မှညွှန်ကြားလျှင် □ အကြံဉာဏ်ပေးခံရသောအခါ □ ရောဂါလက္ခဏာပေါ်လာလျှင် □ မိမိသဘောနှင့် □ အခြား.....

၆. ၂ ပတ်ကျော်ချောင်းဆိုးကြောလျှင် တီဘီရောဂါ ရှိ မရှိ သိရှိ စစ်ဆေးရန် ကျန်းမာရေးဌာန သို့ သွားလေ့ရှိပါသည်။

□ ရှိပါသည် □ မရှိပါ □ တခါတရံ ရှိပါသည် □ မဖြေချင်ပါ □ ၂ ပတ်ကျော်ကြာအောင် ချောင်းမဆိုးဘူးပါ

၇. ကျန်းမာရေးဌာနသို့ သွားရောက်စစ်ဆေးရန် နောက်ကျရသည့်/ မရှိရသည့် အကြောင်းကိုပြောပြပါ။ (အဖြေတခုမကဖြေဆိုနိုင်သည်)

□ ခရီးစရိတ်မရှိ □ စစ်ဆေးမှုကုန်ကျရန်မရှိ □ သွားရမည့်နေရာမသိ □ ဝေးသောကြောင့် □ အခြား.....

၈. ချောင်းဆိုးပြီးတိုင်း လက်ဆေးလေ့ရှိပါသည်။

□ ရှိပါသည် □ မရှိပါ □ တခါတရံ ရှိပါသည် □ မဖြေချင်ပါ

၉. ချောင်းဆိုးနေလျှင် လူထူထပ်သောနေရာသို့ သွားခြင်းကိုရှောင်ကြဉ်လေ့ရှိပါသည်။

□ ရှိပါသည် □ မရှိပါ □ တခါတရံ ရှိပါသည် □ မဖြေချင်ပါ

၁၀. ချောင်းဆိုးနေလျှင် အလုပ်/ ကျောင်းမှ ခွင့်ယူလေ့ရှိပါသည်။

□ ရှိပါသည် □ မရှိပါ □ တခါတရံ ရှိပါသည် □ မဖြေချင်ပါ

1. Interview date
2. Name of interviewee
3. Address (number, name of wards/ villages)

Part 1 Back ground information of Interviewee

1. Age
2. Sex
   Male
   Female
   Other

3. Marital status
   Single
   Married
   Separated
   Widowed
   Others

4. Educational level
   Illiterate
   Can read and write
   Primary
   Secondary
   High
   Graduate and above

5. Type of work
   Dependent
   Pension
   Coolie/ daily workers
   Owner
   Government
   Private business
   Others

6. Family income level
   Under 50,000
   Between 50,000 to 100,000
   100,001 to 300,000
   300,001 to 500,000
   500,001 to 1,000,000
   Above 1,000,000

7. How many family members do you live in here?

8. Are there TB patients in past among family members, if yes, please mention number and relation
9. Are there MDR TB patients in past among family members, if yes, please mention number and relation
10. Are there TB patients now among family members, if yes, please mention number and relation
11. Are there MDR TB patients now among family members, if yes, please mention number and relation

12. If there is TB patient in your family, keep the patient in separate room

13. If not keep in separate room, please mention the reason
    No extra room
    No enough space
    No need to keep in separate room

14. Are there TB patients in past among family members, if yes, please mention number and relation

15. Are there MDR TB patients in past among family members, if yes, please mention number and relation

16. How long have been here? ___ Month
17. Which state and region did you move?
18. Reason of moving
    For better work
    For better education
    For better health
    Following with family
    Others

19. Do you know the place for getting TB diagnosis and treatment?
    Yes
    No
    Don't want to answer

20. Which place can you get the TB diagnosis services?
    Township hospital
    Rural health center

Sub center
Private clinics
Others

21. Where will you go among places
    Township hospital
    Rural health center
    Sub center
    Private clinics
    Others

22. Why do you choose above place?
    Save time
    Save money
    Getting free of charge

23. How do you go to your place of choice?
    Walking
    With bicycle/ trishaw
    With motorcycle
    With taxi/car
    Bus

24. How long have you take to arrive there?
    Within half an hour
    Within half an hour to one hour
    Within one hour to three hour
    Three hour and above

25. How much have you spend to arrive there?
    No need
    Below 1000 MMK
    Between 1000 to 3000 MMK
    Between 3000 MMK to 10000 MMK
    Above 10000

26. Where do you get the information related with Tuberculosis?
    Television
    Radio
    Book/ journal/ newspaper and pamphlets
    Health care workers
    Family
    Relatives/ friends/ neighbors

Never receive the information
Others

Part 2 Knowledge

1. What is the main cause of Tuberculosis?
   Common cold
   Tired
   Inhaling dust
   Drinking alcohol
   Smoking
   Tuberculosis bacteria
   In HIV patients
   In diabetic patients
   Don't know
   Others

2. How do TB infect to other person?
   Touching
   Eating utensils together
   Via air
   Biting by insects
   Don't know
   Others

3. What are the signs and symptoms of TB that you know? (please tick all you know)
   Low grade fever
   Abdominal pain
   Loss of appetite
   Loss of sound sleep
   Easily fatigue
   Cough
   Headache
   Sputum
   Chest pain
   Loss of weight
   Abnormal bowel and urination
   Back pain
   Night sweating

4. When will you make the test for TB?
   Over 2 weeks of fever
   Over 2 weeks of cough

Over 2 weeks of diarrhea
Severe Headache
Vomiting

5. Do you think that person occur TB whenever TB infect?
   Yes
   No
   Don't know
   Don't want to answer

6. Which group can be more infected with TB? Tick all you know
   Under 5
   Old ages
   Diabetic patient
   Person in weak immune system
   Malnutrition patients

7. What would you do if you thought you had TB? Tick all that apply
   Will consult with doctor
   Sputum examination
   Chest X ray examination
   Blood test
   Ultrasound
   Don't know
   Other

8. Do you heard which parts of body can infect of TB? Tick all that you know
   Liver
   Lungs
   Brain
   Eye
   Intestine
   Bone
   Kidney

9. Can TB be cured?
   Yes
   No
   Don't know
   Don't answer

10. Do you think that TB can get surrounding person?
    Yes

No
Don’t know
Don’t answer

11. TB can preventable?
    Yes
    No
    Don’t know
    Don’t answer

12. How can a person prevent getting TB? (Please tick all that are mentioned)
    Keep in separate room
    Avoid speaking with TB patient
    Apply mask during speaking
    Don’t eat together
    Don’t sleep together

13. What will happen if TB patient couldn’t take TB treatment?
    Die
    Can infect to others
    Can be multi drug resistant TB/ total resistant TB
    Lung cancer
    Don’t know
    Others

14. How long have TB patient take for treatment?

15. What challenges can you face if you have to move during TB treatment?
    Don’t know the place for taking out of the drug
    Don’t have the time for taking out of the drug
    Don’t have the enough money for taking out of the drug
    Don’t know
    Don’t answer
    Couldn’t go due to suffering the side effect

16. Do you know that TB treatment can get free of charge?
    Yes
    No
    Don’t know
    Don’t answer

17. What will TB patients suffer due to TB drug?

Loose motion
Fever
Loss of appetite
Vomoting
Itchieness
Red color urination
Joint swelling
Others

Part 3 Attitude

		১	২	৩	৪	৫
		Strongly agree	Agree	Neither agree or not	Not agree	Strongly not agree
১	**Everyone have duty to prevent TB**					
২	**Eveyone can get TB**					
৩	**TB is the serious disease**					
৪	**Cover mouth and nose during coughing**					
৫	**Cause of TB due to uncoverable coughing and spitting**					
৬	**If you think you had TB, you will go to health center for checking**					
৭	**Should take leave not to spread TB to colleges if you have TB**					
৮	**Only Ministry of health have the responsibility to control TB**					
৯	**Should not move during TB treatment as you are migrant**					

Part 4. Practice

1. Cover mouth and nose every time on coughing
   Yes
   No
   Sometime
   Don’t want to provide answer

2. Keep handkerchief for covering
   Yes
   No
   Sometime
   Don’t want to provide answer

3. Apply cover with hand/ elbow if you are not with handkerchief
   Yes
   No
   Sometime
   Don’t want to provide answer

4. Go for consultation if cough is over two weeks
   Yes
   No
   Sometime
   Don’t want to provide answer

5. When will you do for TB diagnosis
   If doctor instruct
   Suggest by anyone
   Find yourself with TB sign and symptom
   Own decision
   Others

6. Go to health center whenever you had cough over 2 weeks
   Yes
   No
   Sometime
   Don’t want to provide answer
   No history of cough more than two weeks

7. If no in above question, please state the reason
   Not having enough money for travel expense
   Not having enough money for test
   Don’t know the place
   Due to long distance
   Others
8. Hand wash every coughing
   Yes
   No
   Sometime
   Don’t want to provide answer

9. Avoid crowded area while having cough
   Yes
   No
   Sometime
   Don’t want to provide answer

10. Taking leave while having cough
    Yes
    No
    Sometime
    Don’t want to provide answer