

CARE ON THE VERGE
GLOBAL HEALTH INTERVENTIONS FOR MALARIA
AND BIOLOGICAL CITIZENSHIP AMONG
UNDOCUMENTED KAREN MIGRANTS IN THE THAI-
BURMA BORDERLAND

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ABSTRACT

This dissertation investigates global health interventions for malaria in the borderland, and the ways in which it impacts social relations, identity, and border experiences among the people at international malaria research clinics. The Thai-Burma borderland has become a site of increased malaria control interventions due to the emergence of multidrug-resistant (MDR) malaria parasites and the existence of highly mobile populations without citizenship. As such, they have shaped the landscape of the borderland as an ambiguous and liminal space for local Karen migrants and international medical doctors. I explore the ways in which people perceive of malaria as a biosocial disease in a clinical setting and create a new identity through experiencing the political economy of the borderland.

Undocumented Karen migrants from Burma cross the international border to seek health care access at the Shoklo Malaria Research Unit (SMRU), an international malaria research unit in Thailand. They experience malaria as a consequence of political economy of ethnic conflict, poverty, structural violence, and discrimination against them as non-citizens and as undocumented migrants in the borderland. The vulnerability of this population is shaped by their lack of political citizenship by governments. However, medical researchers have neglected the sociocultural, political, and economic aspects of malaria, nor have they considered the social experiences of undocumented Karen migrants.

The SMRU clinics provide care opportunities for undocumented Karen migrants, but also assures cosmopolitan medico-humanitarianism opportunities for international doctors as well as local Karen health practitioners. More importantly, access to healthcare at these facilities provides biological citizenship to undocumented Karen migrants. The SMRU

clinics generate statistical evidence and scientific knowledge of malaria suffering. Despite this, the knowledge produced does not represent patients' individual experiences of suffering with malaria and social inequalities. Thus, I argue that the inequalities and violence that people experience in their everyday life in the borderland are tactically ignored by the global health paradigm of malaria.

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LIST OF ABBREVIATIONS AND FOREIGN WORDS

ACT	Artemisinin-Based Combination Therapy
BBC	Burmese Border Consortium
BIA	Burmese Independence Army
BHWT	Backpack Health Worker Teams
BKBA	Democratic Karen Buddhist Army
BPP	Border Patrol Police (Thailand)
DDT	Dichloro-Diphenyl-Trichloroethane
DPCT	Detailed Parasite Clearance Time
GFATM	Global Fund to Fight AIDS, Tuberculosis, and Malaria
GMS	Greater Mekong sub-Region
G6PD	Glucose 6-Phosphate Dehydrogenase
IDPs	Internally Displaced Persons
IPD	In-Patient Department
IRS	Indoor Residual Spray
ITN	Insecticide-Treated Bednet
KHRG	Karen Human Rights Group
KNLA	Karen National Liberation Army
KNU	Karen National Union
KNUP	Karen National United Party
<i>Lema</i>	Patient Medical Record Book
MDR	Multidrug-Resistant
MOI	Ministry of Interior (Thailand)

MOPH	Ministry of Public Health (Thailand)
MORU	Mahidol-Oxford Tropical Research Unit
MSF	Médecins Sans Frontières
NGO	Non-governmental Organization
OPD	Out-Patient Department
PCR	Polymerase Chain Reaction
<i>P.falciparum</i>	Plasmodium Falciparum
PPPs	Public and Private Partnerships
<i>P.vivax</i>	Plasmodium Vivax
RBM	Roll Back Malaria
RDT	Rapid Diagnostic Test
SLORC	State Law and Order Restoration Council (Burma)
SMRU	Shoklo Malaria Research Unit
SPDC	State Peace and Development Council (Burma)
<i>Tatmaraw</i>	Burmese army
Tharamu	Officials, Doctor, Nurse (Karen)
TBBC	Thailand Burma Border Consortium
UNHCR	United Nations High Commission for Refugees
UNICEF	WHO and United Nations Children's Fund
<i>Yaa-chud</i>	Cocktailed pharmaceutical drugs sold as a package in Burma

INTRODUCTION

1. Entering the Field

In December 2009, I contacted Dr. Komatra Chuengsatiansup¹ in the Thai Ministry of Public Health in Nonthaburi. I explained the purpose of my visit was to study the local understanding of drug-resistant malaria along the Thai-Burma² border and people's health-seeking behaviors. I told him that I had heard from many Thai people that malaria was brought into Thailand by migrants, including ethnic minority peoples along the borderland, thus I was interested in conducting my fieldwork in a border village. After listening to my explanation, Dr. Chuengsatiansup suggested that I should join a medical students' field trip and visit a remote Thai Karen village in the Umphang District in Northwestern Thailand. He said it was a special occasion because they were expecting an annual visit of the eldest princess of the now deceased Thai King Bumiphol, Princess Sirinthorn, and her royal party to several remote villages to investigate villagers' health and medical needs. During the annual visit, the princess would offer free medical opportunities at Thai public hospitals to people

¹ Most of individual names in this dissertation are pseudonym, unless they had official titles in the governmental institutions and organizations, or the person was well known. The contents of this dissertation and interpretations of analyzed data are solely the results of the author's work. Therefore, no one is owed any criticisms, except the author.

² In this paper, I will present the country name "Burma" instead of Myanmar. The Burmese government changed the country's name to Myanmar in 1989 in order to resolve the tensions between Burmese and ethnic minority groups. However, most ethnic opposition groups rejected this change because they claimed that the process should be democratic and the intention of the Burmese junta was only to "Myanmaficate" under the name (Gravers, 1999). During my fieldwork from 2011 through 2013, not only Karen ethnic minority informants but also Burmese doctors referred to the country "Burma" instead of its official term "Myanmar." I only heard the term Myanmar among Thai citizens. Considering that some ethnic minorities in Burma still resist calling their country Myanmar for political reasons, and the fact that the former term has been broadly and practically used in Mae Sot, I keep the country's name as Burma in my dissertation unless it is necessary to describe its official name.

from ethnic minorities who do not have sufficient financial resources to pay for their treatment. Dr. Chuengsatiansup picked up his phone and contacted the Director of the Umphang District Hospital on the spot, and asked him to take me along with other medical school students. Two nights before I visited Umphang, I took an 8-hour night bus at the Northern Bus Terminal in Bangkok to a border town called Mae Sot.

The bus stopped at a checkpoint around four o'clock in the morning. It was dark and surprisingly chilly. Then, the bus suddenly slowed down and the driver pulled over on the side of the road and opened a passenger door. In the morning mist, sharp lights pierced through the curtains of the passenger windows, blinding us as if an interrogation would start. I saw a Thai Border Patrol Police (BPP)³ officer in uniform come up on the door sidestep. Sternly, he started asking each passenger to show their documents. I did not know about document checks on the long-distance bus route even after traveling to many places in Thailand; in fact, this was the first time I encountered a checkpoint in the middle of the road which is not on the international border. The moment the police officer approached, I realized I had packed my passport in my backpack and had loaded my backpack in the bus cargo bay. I explained to the BPP officer my situation, and he ordered me off the bus to retrieve it. I frantically searched for my documents, as the passengers quietly waited and looked at me through the windows. Luckily, I was able to produce my official document to the officer. As soon as I showed him my Japanese passport with an entry stamp, he let us go. Relieved, I tried to fall asleep again.

3 In her book, *Between Hills and Plains: Power and Practice in Socio-Religious Dynamics among Karen*, Yoko Hayami described that the Border Patrol Police (BPP) was “founded in 1956 from elite military units with US support, operating to secure order and gather information, as well as introducing education and medicine to the hill areas” (Hayami: 2004: 50).

Soon after the first checkpoint, however, the bus slowed down and the driver dutifully pulled over along the side road again. It was the second checkpoint on the highway running through the mountain. This time, I was able to observe the checkpoint calmly from my window. There were twenty to thirty people, including small children, sitting on plastic stools in an open-air space under a concrete roof. I caught sight of a family who looked like ghosts under the roof's dim light. Outside in the middle of the mountain road, it was still dark. There was a father sitting on a chair hugging his small twin sons on his laps to keep them warm. The three remained still and were quietly staring at our bus with exhausted eyes. They were detained there without valid documents. Our bus departed, leaving them to the cold night. Before the bus reached to Mae Sot Bus Terminal, there were three checkpoints in total, each with the same routine, each with similar ghostly figures left behind.

This was my first Thai-Burma borderland experience. It occurred in December 2009. The encounter with the Thai BPP at the checkpoints and the visions of detained, undocumented migrants left me with a strong impression of the precarious situation of people without documents in the borderland. People who failed to produce official documents at the checkpoints were required to pay fines to the BPP, then sent to one of the detention centers in Mae Sot. They would wait until someone could provide the person's official ID. If they could not, they were sent back to Burma.⁴ The BPP's meticulous search of illegal and

4 My Karen friend, who was once a refugee from Burma and fled to a Thai refugee camp in the mid 1980s told me his experience. After spending years in a refugee camp in northwestern Thailand, he has resettled in New Zealand. He also mentioned that those deported people would still come back to Thailand again, hoping to get another chance. The illegality of traveling within Thailand by temporary migrants is accepted and tolerated by the Thai government in border village sites. However, beyond border village sites, the security of undocumented migrants is not guaranteed.

undocumented migrants gave me a sense of a ‘hard’ borderland image that contrasted with actual border sites which were porous and permeable.

While it was attractive to live in a very remote Thai Karen village in the Umphang District to conduct research on the people’s local understandings of malaria and health-seeking behaviors, I was drawn to live in Mae Sot after this first borderland experience. Mae Sot is where the international malaria clinics are concentrated and represents the convergence of the borderland between the Karen, Thai, and international doctors. International doctors, therefore, experience living in the borderland phenomenologically in and outside their clinics. So do the Karen, as traveling to and from the international clinics bears considerable risk of exposure and harassment by the Thai BPP. Even after I visited a remote Thai Karen village and came back to my university, this first borderland experience always brought me back to imagine the life of people who endured political economic and everyday violence in the borderland as non-citizens and disease-bearers. Thus, when I went back to Mae Sot again in March 2011 to conduct extended fieldwork on malaria at Shoklo Malaria Research Unit (SMRU) clinics in the borderland.

During my fieldwork, I continually heard stories of drug-resistant malaria in the borderland from various Thai people. Thai nurses and school teachers in the western border towns, retired vector-borne disease control office workers in Chiang Mai, and the Director of the Museum of World Insects and Natural Wonders in Chiang Mai, all argued that ‘Non-Thai peoples’⁵ are the primary bearers of multi-drug resistant (MDR) malaria in Thailand.

However, if you examine the available statistics, over 50 percent of malaria cases are actually

⁵ There are migrant populations who have long been in Thailand without citizenship and migrants who have been in Thailand temporarily were the major disease carriers.

Thai citizens (WHO 2015). Why are these numbers ignored by epidemiologists and global health practitioners? And why is the migrant population always blamed for the malaria prevalence in Thailand? To investigate the cultural politics of epidemiology, SMRU clinics provided me the best place to conduct this ethnographic study.

At SMRU clinics, researchers highlighted evidence that drug treatments were less efficacious, and more likely to fail. This evidence supports the global health discourse on the risk of drug-resistant malaria parasites along the Thai-Burma and Thai-Cambodia border. The World Health Organization (WHO) identifies multidrug-resistant malaria (MDR) in cross-border populations and pregnancy as the main obstacle in achieving their goals. Malaria is considered a public health problem, and major economic disturbance in poor regions and countries.

By observing everyday clinical practices, my research investigates: 1) how malaria is understood and experienced by undocumented Karen migrants in the borderland; 2) how illness experiences of malaria are intertwined with other social suffering among the undocumented migrants; 3) how the epidemiology of the emergence of MDR malaria along the border and the political economy of the borderland shape global health interventions at the local clinical setting. My research adds to the ethnographic literature on clinics in the borderland as well as the Karen. By drawing upon fieldwork at the SMRU, I investigate the intersections between medical anthropology and global health interventions of malaria in the borderland. I claim that the lives of undocumented Karen migrants in the Thai-Burma borderland and their access to biomedical health care oscillate in response to global health discourses on MDR malaria as well as border politics of citizenship and ethnicity. The goal of this dissertation is to analyze how the Karen people's sociocultural background and their

political economic environment are connected to the epidemiology of MDR malaria in the Thai-Burma borderland.

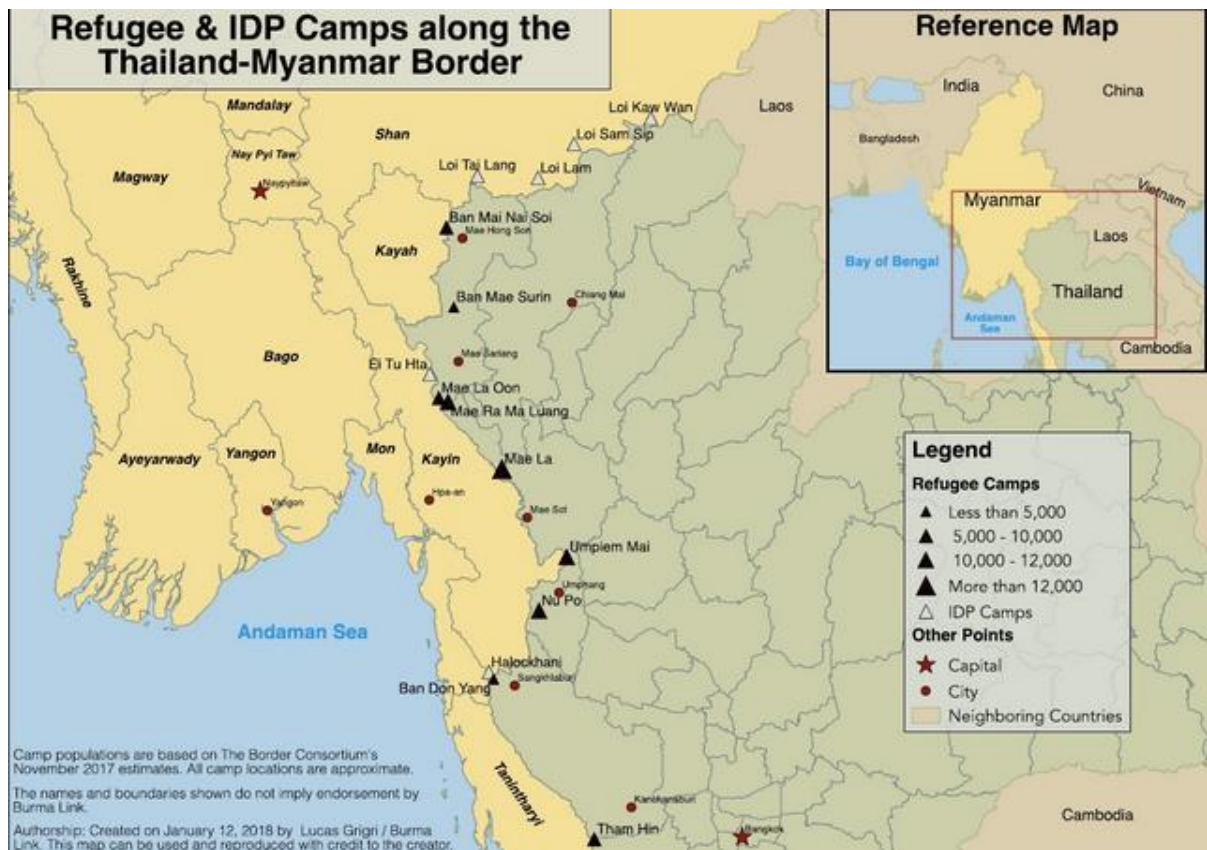


Figure 1.1. Geographical Location of the Thai-Burma Border.⁶

2. Borderland Across Space, Practice, and Discourse

In this study, I use the borderland as an analytic framework within each chapter. I do so because, in my study of clinics, I found the borderland concept to be a key theme within discussions of clinical practices and health interventions for migrant populations. The borderland evokes images of permeability of migrants, disease, and medical research practices. While global health malaria control encourages the surveillance of the disease across border sites, there is more meaning for the people, who have symptoms and cross the

⁶ Map source from the Burma Link website: https://www.burmalink.org/wp-content/uploads/2018/02/Refugee-IDP-Camp_Map_Thai-BMM_BurmaLink.pdf. accessed July 19, 2018.

border to negotiate their rights and receive care at clinical settings in a foreign country. From these descriptions of mobile people and their cross-border practices, one can be tempted to conclude that they possess a high level of agency and self-determination. However, by illuminating how they experience violence and inequality in their everyday lives, I will argue that in reality their agency is limited and contingent.

The borderland space has always been negotiated and reshaped by peoples through their everyday practices and politics. Michel de Certeau (1988) claimed that space of the borderland is never ontologically given but, rather, it has been constructed through everyday practices. The Thai-Burma borderland is seen as an imagined social community by Thai people. In her Ph.D. dissertation, Sharples (2005) summarized the concept of borderlands as a space that was “made up of more abstract notions around discourse and identity, but also characterized by social relations that distinguish this particular space from others” (Sharples 2005: 53). The mobile populations in the Thai-Burma borderland often do not have adequate access to health care, and violence and harassment from authorities in border regions is normalized (Macan-Marker 2016).

Borderlands also play a significant role in creating discourses that influence people’s notions of the illness, public storylines, and the government’s public health interventions (Briggs and Mantini-Briggs 2003; Hyde 2007). By exploring various discourses on HIV/AIDS in the borderland of the Yunnan Provinces in China, Hyde claims that the Han conceptualization of the borderland, exotic ethnic Tai-Lue women, and unknown HIV/AIDS are linked together in their moral narratives of ethnic minority women (Hyde 2007).

As for methodology, conducting fieldwork on cross-border migrant populations requires a researcher to follow them and cross the border illegally. While crossing the Thai-

Burma border at the custom at the Friendship Bridge in Mae Sot and numerous unofficial checkpoints along the strip of the Thai-Burma international border were not an issue for the Karen undocumented migrant populations, it raised a red flag for a foreign researcher. This duality and ambiguity illuminates the limited permeability of the borderland. Therefore, I explore the concepts of ‘borderlands’ to demonstrate how as an analytic tool the term helps in discussing some overarching topics both in medical anthropology and ethnography of the migrants. My research into the borderlands contributes to discussions in medical anthropology and global health intervention by highlighting the intersection of space, practice, and official public health discourses on malaria.

To be clear, the Thai-Burma borderland is not a spatially marked geographic place. I distinguish the borderland space from the political provinces or states of each side of the countries. The Thai-Burma borderland *is* located in between the two nation-states, where people practice spatial activities such as crossing the border, literally talking about the life and different kinds of diseases of ‘the other side,’ and engaging in political and economic activities that lead them to engage in cross-border solidarity. As a space, the Thai-Burma borderland is conceptually and operatively negotiated by people in various networks. Thus, the borders of space, practice, and discourse within the Thai-Burma borderland constantly oscillate in different times.

According to Michel de Certeau, space is “composed of intersections of mobile elements.” (Certeau 1984: 117). Certeau shares a phenomenological concept of space with Merleau-Ponty’s spatiality. Both frame *space* as not an ontologically given entity but a practiced place. Succeeding de Certeau’s discussion of the space and operative practices of the border, cultural theorists also examine the concept of borderlands. Akhil Gupta and

James Ferguson claim that a borderland does not indicate “a fixed topographical site between two other fixed locales (nations, societies, cultures), but an interstitial zone of displacement and deterritorialization that shapes the identity of the hybridized subject” (Gupta and Ferguson 1992: 18). However, I argue that this claim of hybridity of culture and representation does not apply to the Karen undocumented migrants.

As a space, borderlands have long been discussed as the “frontline zones of contact” (Oscar 1994: 3), where people, materials, technologies, capitals, and disease agents are on the move. A borderland space creates economic opportunities like in the U.S.-Mexico border zone (Holms 2013; Quesada et al. 2011). It is this practice of various agents such as multinational corporations, media, NGOs, consumers, trade organizations, and international lawyers that create the borderland space, conceptually and discursively. Frictions produced through the interactions between global-scale forces and locals shape borderland culture (Tsing 2005).

Mae Sot in northwestern Thailand is a major border town, harboring various ethnic minorities, local Thais, and foreign visitors. Because of the large number of undocumented migrants, the Thailand Ministry of Public Health (MOPH) cooperates with multiple donors and global health players to provide access to health care to the various migrant populations. At clinics servicing migrant communities, one can see that foreign medical doctors and biological researchers collaborate with local Karen staff. In their interactions, each group reveals their own expectations to join the Shoklo Malaria Research Unit (SMRU) as employees and work for malaria intervention practices. The diversity of ethnicity and citizenship status among the SMRU employees sometimes creates subtle friction in regards

to the salary and benefits. I analyze how such friction among the various employers at SMRU shape the everyday health delivery at the clinical settings.

I also explore how the concept of the borderland is used in medical anthropological ethnographies. Speaking of the “gaze” in the biomedical space, Michel Foucault (2003) argued that the birth of the modern medical practices started in the 18th century, creating medical knowledge through the doctor’s discerning gaze upon the patient body. Under this biomedical gaze, the body itself emerged as “border territory,” and illness experiences became part of borderland experiences (Hahn 1985: 87-98). In this sense, the body can also be considered a borderland, where people exercise their agency to seek treatment and negotiate their health options with practitioners. As such, Foucault’s analysis opens discussions of medical practice as a cultural contact zone between patients and biomedical professionals.

Medical anthropologist Cheryl Mattingly argues that much of the work in medical anthropology has examined transactions and interactions between professionals and patients within the same culture (Mattingly 2010). In *The Paradox of Hope*, Mattingly discusses that borderlands are “spaces of contradiction and disorder, as well as sites of cultural fluidity, identity making, and diverse and marginal forms of citizenship” (Mattingly 2010: 9). At clinical settings, often historical relationships such as colonial power are manifested (Street 2014). By investigating the history of hospitals in Papua New Guinea, Alice Street argued that ethnographies of hospitals and clinics present the hospital as “an important field laboratory” in which evidence-based medicine and clinical interventions were tested (ibid: 203). Such hospitals in colonial states were also designed to mobilize people as national subjects, modernize the nation-state by medicalizing people, and change the relationship

between the state and publics. Thus, hospitals become an instrument for naming a disease that is linked to cultural concepts and people's social relationships.

This is how I situate my clinical ethnography as a study of borderland. I view biomedicine as a cultural entity, which is negotiated between patients and medical practitioners in an ethnically and politically diverse cultural setting. Receiving healthcare in the biomedical setting creates a sense of patient responsibility among Karen migrant patients. On the other hand, practitioners view patient bodies as intervention sites; yet, their experiences of suffering from malaria and descriptions of pain are largely ignored by practitioners. Drawing upon my research at several field clinic sites and the main office in Mae Sot, I explore how biomedicine is practiced at the Shoklo Malaria Research Unit (SMRU), and how their interventions create an ambiguous landscape of care for the Karen people in the borderland.

The borderland also provide flexibility in studying to how biomedical knowledge is negotiated by various subjects, and medical practices entail subjectivity (Mol 2002; Street 2014). Street argues that biomedical knowledge and diagnostic technologies bring a temporal dynamic to a clinical borderland. This adds to earlier discussions in medical anthropology on subjectivity in science (Knorr-Centina 1999; Martin 1994). Studying how biomedicine and clinical practices have developed from the history of medicine, anthropologists claimed that clinical practices and health interventions were often linked to the cultural notions of race, class, and colonial expansionism (Arnold 2000; Comaroff 1995; Farmer 1992, 1999).

To study the health of migrants and refugees, anthropologists also cross both geographic and conceptual borders to elucidate the people's embodied suffering. Seth Holmes (2013) studied Triqui migrants who crossed the border between the U.S. and Mexico

to engage in strawberry picking, and he claimed that crossing the border involved extreme financial, physical, and emotional suffering, which were embodied in their dysfunctional bodies on many levels. While migrant workers are often considered to have considerable agency in the “push-and-pull” factors of international labor migration (ibid: 15), Holmes denied this conceptualization of his subjects, and echoed his informants’ narratives of economic precarity in their homeland and the influence of the international market economy.

Perhaps the most vibrant field in medical anthropology now is the discussion of medical ethics in clinical research and humanitarian counter-discourses against the neoliberal global health. Adriana Petryna (2002) pioneered the field of clinical ethnographies and developed the concept of *biological citizenship* – people who claimed their disabilities by mobilizing medico-legal knowledge to gain access to pharmaceuticals and state benefits in post-Chernobyl Ukraine (Petryna 2002). In the field of clinical research, the boundary between people who are well informed of their rights and benefits and those who are not, is often blurred. For example, even if people are well informed, they may not have other health options. Thus, ethics in the clinical field is still a workable document in progress (Petryna 2009). Given these discussions on the borderlands, I investigate how Karen migrants in the borderland seek access to healthcare for their malaria treatment at the clinical and village setting.

Clinical studies of multidrug-resistant malaria and the safe use of pharmaceuticals in treating pregnant women and small children require a constant supply of patients who are contracted with malaria parasites or susceptible to malaria infection. The Thai-Burma borderland offers a unique clinical trial space, in which patients are in dire need of malaria

treatments. At the same time, the bioethical regulatory systems need to be loosely informed to the people without citizenship.

Finally, people create cultural representations in the borderlands (Forsyth and Walker 2008; Rosaldo 1988, 1989; Shostak 1981). Medical anthropologists have investigated how illness narratives traverse the boundaries of different medical systems, creating biomedicine as one of many cultural beliefs (Mattingly 2010; Saethre and Stadler 2007). In this study, I also investigate cultural perceptions of malaria among undocumented Karen patients. My findings indicate that the Karen often switch between biomedical explanations and ethnocultural understandings of malaria. For this reason, statistical surveys are not effective tools to investigate Karen cultural notions of malaria. Instead, in-depth interviews and life histories must be included.

Given the lack of ethnographies of health and interventions, I argue that the conceptualization of borderlands has not yet received enough attention in the field of global health interventions for infectious disease. I argue that the idea of the permeability of borderlands is a particularly useful concept to explore interventions for ethnic minorities suffering from malaria and everyday violence at the Thai-Burma border. By examining the political economy of health inequality among undocumented Karen migrants and the everyday violence they experience, I will elucidate the ways in which malaria transmission is a consequence of political, social, economic, and cultural factors rather than a simple biological reality.

With this conceptual framework, I discuss the Thai-Burma borderland as a contact zone, where multiple players interact with each other, and shape the landscape of care through global health interventions. The borderland in biomedical interventions sites create

the “projectified space” (Whyte et al. 2013), where Karen undocumented migrants become biomedical beings who consequently de-politicize their historical background of structural inequality. Their everyday lives are entangled in international border politics constantly requires them to negotiate various discourses on politics and humanitarianism in global health at the individual, regional, and global level.

3. The Undocumented Karen Migrants in the Thai-Burma Borderland

The “Karen” is an umbrella term that describes multiple ethnic minority groups in Thailand and Burma.⁷ Because of their cultural diversity within the ethnic group, many scholars agree that it is hard to define a single factor that signifies the Karen ethnic group (Buadaeng 2001, Gravers 2001, Kunstadler 1997). Linguistically, there is still a debate among scholars regarding the origin of the Karen language groups. However, several resources claim that based on their Sino-Tibetan linguistic categorization, their origin is speculated to be in southern Tibet (Lewis and Lewis 1984) and their languages belong to the Tibeto-Burman group of the Sino-Tibetan language family (Lehman 1979; Frank and others 1964). The majority of Karen live within the geopolitical borders of contemporary Burma in three major areas: the Kayin (Karen) State, the Irrawaddy Delta Region, and the Shan States in eastern Burma (Renard 2003; Hayami 2006). However, they can be also found living in various places in Burma. Currently, the total population is estimated to be between six and seven million people (Bodeker and Neumann 2012; Burma Project 2006; Renard 2003; Karen National Union Webpage 2001).

⁷ The word ‘Karen’ refers to the Mon term, *karieng*, which combines two words, *kha* and *riyang*. The same resource suggests that *Kha* means a class of people who are uncivilized forest-dwelling people from the Tai’s worldview. *Riyang* refers to forest people living around the lowlands and speaking dialects (Renard 2003: 1-2). Thus, from the localized views, *karieng* refers to people who speak Karen dialects who are animistic, forest dwellers thus differentiated from civilized lowland Tai.

This study mainly focuses on the Karen who cross the international border from Burma to Thailand without official documents and receive healthcare at international malaria research clinics in Thailand. I refer them to as undocumented Karen migrants in this dissertation and differentiate them from internally displaced persons (IDPs), refugees, and Thai Karen, who also live in the Thai-Burma borderland.

The end of World War II saw the Karen people left with their hope of independence from Burma. Political motives motivated the Karen to formalize their own political representative body, the Karen National Union (KNU) in 1947. Control of the Union of Burma was assumed by the military junta, represented by the State Peace and Development Council (SPDC) in 1962. Under military oppression, ethnic minority peoples, including the Karen took up arms against the SPDC-led government, and many of them fled from their villages to seek asylum in Thailand. Burma now entered a period of civil war, which was one of the longest ethnic conflicts in the world. While an estimated 500,000 people fled from Burma to border towns and refugee camps in Thailand to avoid persecution by the Burmese government, the Karen comprised the majority of various ethnic minority groups. The number of Karen refugees in Thailand was estimated at 18,000 in 1986, however it mushroomed to 90,000 in at total twelve refugee camps in two years (Bowles 1998: 12, 14).

By definition, IDPs are people who are forced to flee from their home, but never cross an international border.⁸ The actual number of Karen refugees who still live in several refugee camps in Thailand is not unknown; yet it is counted that 110,607 refugees still remain in nine refugee camps in Thailand and receive food rations from the Border

⁸ From the United Nations High Commissioner for Refugees (UNHCR)'s website: <https://www.unrefugees.org/refugee-facts/what-is-a-refugee/> (accessed on July 8, 2018).

Consortium (TBC), the main organization that provides food and other aid services to the refugee population.⁹ Of these, the Karen ethnic group constitutes 79.1 percent of the total refugee Burmese population in the camps.¹⁰ Since 2006, the United Nations High Commissioner for Refugees (UNHCR) halted the registration of newcomers within the refugee camps, and people who were not registered prior to that year have lost the resettlement opportunities to third countries such as the United States and Australia. Some Karen refugee youths in major camps such as Mae La, Umpiang Mai, and Nu Po in the Tak Province are able to receive higher education from international NGOs, yet the opportunity is limited.

Compared to the Karen IDPs and refugees in the camps, undocumented Karen migrants who live in villages along the Thai-Burma borderland receive minimum aids both from international and local NGOs, or the United Nations. They share similar stories of displacement, violence, poverty, humiliation by the police and army, and deportation risks. They have freedom to move or work as daily wage workers in Thai agricultural fields, but are left without healthcare, protections, and any legal status. Therefore, some of my Karen informants who have resettled in third countries and speak fluent English call these people as the “stateless.” I also exclude Thai Karen from this study. Thai Karen have long been settled in Thailand, and although some of them have never been naturalized as Thai citizen, they share a strong sense of belonging to Thailand, and often speak Thai fluently.

In summary, undocumented Karen migrants have less support from governments, NGOs, international organizations and research institutions compared to Karen IDPs,

⁹ From the Burma Link’s website: <https://www.burmalink.org/background/quick-facts/> (accessed on July 8, 2018).

¹⁰ From the Burma Link’s website: <http://www.burmalink.org/background/thailand-burma-border/displaced-in-thailand/refugee-camps/> (accessed on July 8, 2018).

refugees in the camps, and Thai Karen residents who live in Thai villages. Therefore, adding an ethnography of the undocumented Karen migrants who live off the official aid support in the borderland will fill the gaps in their contemporary ethnographic accounts.

4. Anthropology of Malaria and Global Health

Among the Karen populations inside migrant villages and refugee camps in the Thai-Burma borderland, various health issues were reported with a wide range of common and acute health conditions due to malaria, tuberculosis, HIV/AIDS, Japanese encephalitis, leprosy, and hepatitis (Carrara et al. 2009; Parker et al. 2015). In particular, the high rate of drug-resistant malaria among the ethnic minority population was considered to be a public health threat to Thailand (Bodeker and Neumann 2012; Richards et al. 2009; Wongsrichanalai et al. 2001; Zhou et al. 2005). Yet, the trend of confirmed malaria cases shows that malaria has been drastically decreased among non-Thai migrant populations¹¹ from 50% to 25% in 2010 and 2014, respectively, while malaria among Thais has been steady between 2010 and 2014 (see Fig.1).

¹¹ Non-Thai populations include: refugees in the camps, and non-Thai citizen living in Thailand more than six months (M1) and non-Thai citizen living in Thailand less than six months, thus highly mobile people (M2).

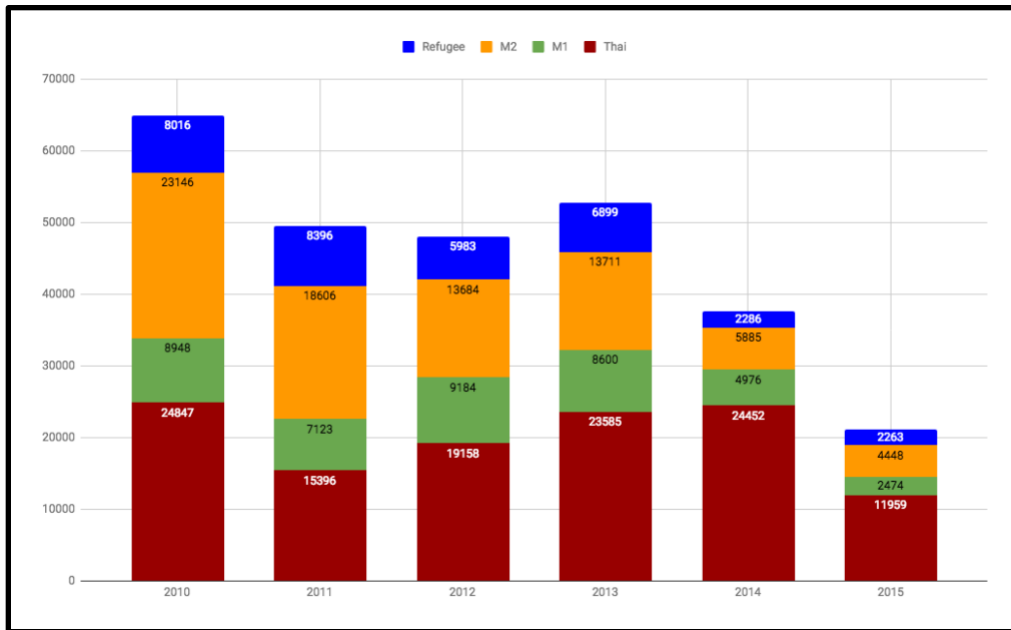


Figure 1.2. Confirmed Malaria Cases (FY 2010 - July 2015)¹²

Among the non-Thai population, the highest proportion of malaria cases in 2014 is found in ten provinces along the Thai-Burma borderland, which comprised about 92 percent of all border provinces in Thailand in the year (See Fig.2). Epidemiological studies also pointed out the challenges in controlling malaria in the region, due to the highly mobile population in the borderland, where the political situation means people’s access to health care is limited (Macan-Markar 2012; Parker et al. 2015). Still, the malaria proportion of the year 2014 based on patient citizenship status shows that the Thai population represents about sixty percent of the total cases (32,953 positive malaria cases in Thailand in 2014) (WHO 2015: 10).

Table 1.1. Malaria Situation in International Border Areas in Thailand, FY 2014¹³

	Thai	Non-Thai	Total
Thailand-Myanmar	6429	7719	14148

12 Source: Bureau of Vector-Borne Disease, Thailand MOPH, modified from an original figure in the WHO 2015 report, p.8

13 Source: Bureau of Vector-Borne Disease, Thailand MOPH, modified from an original figure in the WHO 2015 report.

Thailand-Lao	7206	154	7360
Thailand-Cambodia	1994	145	2139
Thailand-Malaysia	6772	89	6861

My research sheds light on the cultural and biomedical rhetoric of the vulnerability of undocumented Karen migrants in light of controlling and eliminating malaria. This does not mean that the people's suffering is negligible. The political economic situation of the Karen in the borderland requires more attention to their social suffering than just malaria. By focusing on undocumented Karen patients who attended the SMRU clinics, I investigate the ethnic-specific and biosocial context of malaria in the borderland.

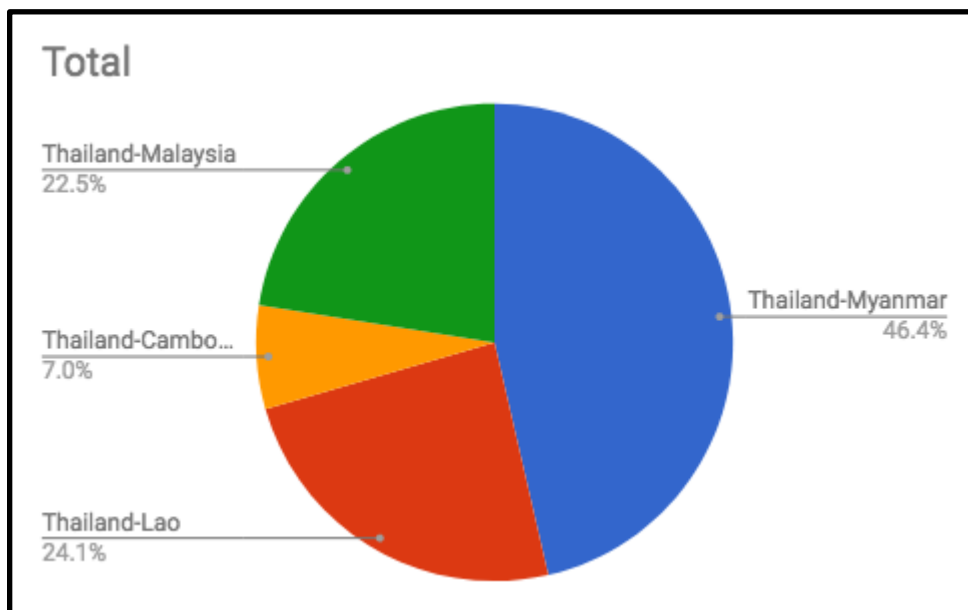


Figure 1.3. Malaria Distribution in International Border areas in Thailand, FY 2014¹⁴

Malaria is considered a major health problem globally. In 2016, an estimated 212 million cases occurred world-wide and caused approximately 445,000 deaths as a single

¹⁴ Source: Bureau of Vector Borne Disease, Thailand MOPH from WHO 2015.

factor of the mortality (World Health Organization 2017). Malaria prevalence is associated with human economic activities such as deforestation by the swidden agriculture, dam construction, irrigation, and human movement to malaria-infested areas. More importantly, the political factors such as political insecurity, war, and conflicts drive people to be located in malaria endemic regions. In many cases, the lack of health access due to violence contributes to the increase of malaria prevalence (Armeragos et al. 2005; Packard 2007).

Among the estimated 212 million malaria cases, Southeast Asia comprises of seven percent. While incidences of malaria on the African continent is disproportionally high and needs more investigation, I argue that Southeast Asia also deserves the attention from epidemiological and global health studies.

Epidemiologists and malariologists contend that the region is also important, due to the existence of multidrug resistant malaria, counterfeit drugs in the borderland, and hard-to-reach cross-border populations (Parker et al. 2015; WHO 2004). Although the mortality and morbidity of malaria are far less serious than in Africa, the Greater Mekong Sub-region (GMS)¹⁵ has been the epicenter of antimalarial drug resistance (World Health Organization, World Malaria Report 2016).

Drug resistant malaria in the GMS is unique in the sense that it emerged in cross-border regions where people are frequently on the move for economic, political, and sociocultural reasons. In the GMS region, the Thai-Burma borderland has the largest number of malaria cases and the highest prevalence rate of drug-resistance among diagnosed malaria cases. Thus, global health malaria experts see the region as an impediment to global health efforts to the malaria control (World Health Organization 2015).

¹⁵ The Greater Mekong Subregion includes: Cambodia, China, The Lao People's Democratic Republic, Myanmar, Thailand, and Viet Nam.

In the Thai-Burma borderland, mobile populations including undocumented migrants and refugees are often found to have contracted MDR malaria. Originally found in the Thai-Cambodia border in the 1950s, malaria that developed resistance to chloroquine moved to the western border of Thailand and eventually spread to further west, such as Burma, India and the African continent. In the 1970s, the Thai-Burma border areas became a hotbed of chloroquine-resistant malaria. Furthermore, in the 1990s, international doctors and epidemiologists who had been working in the border area reported that the artemisinin-derivative drug currently used to treat severe malaria, had been losing its efficacy. Thus, experts warn that the emergence of the multiple drug-resistant malaria strains in the Thai-Burma border areas and neighboring regions of the GMS might potentially become a threat to global health efforts to eradicate malaria from the world population (WHO 2005).

The challenges of controlling multi-drug resistant malaria in the Thai-Burma border are similarly shared in other border areas in the GMS. During the WHO's Malaria Advisory Committee meeting in 2005, members stressed the importance of disseminating education, information, and communication in remote, hard-to-reach ethnic minority populations throughout the GMS to control malaria in the region. The regions that share a border with neighbor countries have ethnic minority populations that are mobile and often out of the government's universal health care scheme. Furthermore, the ethnic minority populations' educational and economic opportunities are limited; thus, community health workers complain that the people are less educated and ignore their health-related communication.

With this epidemiological and regional information in mind, this study explores how global health malaria efforts approach an ethnic minority population and undocumented migrants in the Thai-Burma borderland. Additionally, this study investigates how these

groups perceive clinical interventions by the international malaria research clinics. And, finally, it examines how such experiences eventually shape undocumented migrants' notions of their life and identities.

There are numerous definitions of global health, a burgeoning academic field. To begin with, global health is not yet a discipline, but “a collection of problems” (Farmer 2013:2). One definition of global health is that it is “an area for study, research, and practice that places a priority on improving health and achieving equity in health for all people worldwide” and it emphasizes “transnational health issues, determinants, and solutions” (Koplan et al. 2010:1995). Koplan emphasizes that it includes both population-based prevention and individual-level clinical care. Although this definition is appealing to summarize this unsettled academic field, Koplan's definition does not reflect a critical perspective on global health.

The field of global health has been developed from international health to accommodate multi-sectoral collaborations and public-private partnerships (PPPs) (Cueto 2013). In malaria research, the World Health Organization (WHO), the United States Agency for International Development (USAID) and the United Nations International Children's Emergency Fund (UNICEF) have long collaborated with local governments to eliminate malaria parasites. However, the emergence of drug-resistant parasites and insecticide-resistant mosquitoes in the 1960s changed their eradication goal. After WHO neoliberalism took full charge of global health operations, governments were urged to decentralize their public health programs and funding resources were directly allocated to grassroots and non-governmental organizations (NGOs) with specific-disease focused programs rather than government venues (Berman 1998; Ecks and Harper 2013; Whyte et al. 2013). This does not

mean that governments are not involved in health programs at all. Rather, global health agendas emphasize “public-private mixes” in operating health intervention programs (Ecks and Harper 2013). Thus, some researchers, especially economists, stress that the neoliberalization of global health has brought private players, such as international donors, researchers, pharmaceutical companies, philanthropic organizations, to work not only with the governments, but also with locally-based NGOs and grassroots groups (Cueto 2013).

Another aspect of global health – the moral impediment toward achieving equity in global health – is also viewed as a positive aspect these neoliberal policies. Michael Barnett (2011) and other anthropologists (Fassin 2007, 2010; Ticktin 2011) point to the emerging humanitarianism in global health as a positive, describing that it is “nothing less than a revolution in the ethics of care” (Barnett 2011: 18). However, the vast majority of medical anthropologists, including Fassin and Ticktin, critically analyze the neoliberal turnaround in global health, which overshadows the moral impediment. Studying suffering experiences among Haitians in Port-au-Prince, Greg Beckett claims that this approach has transformed care into the replication of the colonial relationship between Haitians and foreign “masters” for food and shelter (Beckett, 2017: 39). Beckett claims that the victimhood sentiment dehumanizes Haitians and the humanitarian aid apparatus has transformed the people’s attitude from gratitude to dependency. While this is a radical critique from the aspect of local people, most ethnographers agree that more assessment of the impact of global health interventions in local settings are needed.

In sum, my study outlines the neoliberal nature of global health interventions in its operations, and also points out the opposite idealism of the humanitarian aspect at the international malaria research clinics, called the Shoklo Malaria Research Unit (SMRU).

SMRU is unique in a sense that it works to provide malaria treatment to hard-to-reach undocumented migrant communities in the Thai-Burma borderland. At same time, the SMRU limits the diverging health needs among the Karen undocumented migrants due to the political economy of the borderland. Both the neoliberal market economy and moral impediment coexist within the biomedical practices at the clinical sites.

5. Ethnographic Approaches to Everyday Violence

Medical anthropologists analyze the ways in which structural and systematic violence cause inequalities in health amongst people through their ethnographies. Paul Farmer is the leading theorist on structural violence, which he defines as “violence exerted systemically—that is, indirectly by everyone who belongs to a certain social order. [...] In short, the concept of structural violence is intended to inform the study of the social machinery of oppression” (Farmer 2004: 307). He claims that anthropologists’ works have romanticized people’s agency and various forms of “resistance,” He goes onto argue that James Scott’s study (1976) on “the weapons of the weak” can be cited as an example of this theoretical stream. He also addresses that in the extreme poverty in which people’s bodies count as nearly-dead or dead, individual agency is oppressed. He suggests that ethnographies should integrate the contexts of history, biology, and political economy. Without consideration for such contexts, or if the historical context is erased, the incidence of structural violence is desocialized.

While Farmer’s “structural violence” does not seem to leave any room for individual agency and resistance of inequality, Philippe Bourgois and Nancy Scheper-Hughes point out that the term needs to be elaborated and requires more understandings of its relationship to other forms of violence and power, including discursive power (Bourgois and Scheper-Hughes 2014). Together, Bourgois and Scheper-Hughes lay out that people experience

violence which is permeated in their everyday life. Everyday violence in their terms is shaped by the historical processes, contemporary political economy, and local discourses and cultures.

Unlike Paul Farmer's studies and many other medical anthropological studies on infectious diseases, people's various experiences of suffering due to violence are not counted by statistics and graphs. Malaria in the Thai-Burma borderland, and other regions in the world often lack such investigations on everyday life experiences of suffering. Therefore, although the purpose of my study is to investigate global health interventions for malaria among undocumented Karen migrants, it also critically reviews experiences of suffering due to political economy in the borderland. Through the narratives of individual migrants, this study investigates how individual Karen informants reconstruct their experiences of suffering and their understandings of various kinds of violence in the borderland.

6. Methodology

My fieldwork at the SMRU clinics ran for a total of sixteen-months with two phases: from March 2011 to October 2011 and September 2012 to May 2013. Before I started fieldwork at SMRU, I spent four months in preliminary research in several Thai-Karen villages in the Umphang District, as well as conducting archival research at Chiang Mai University and Thammasat University in Thailand prior to fieldwork at clinical sites.

This ethnographic research used mostly qualitative methods: open-ended interviews semi-structured interviews, focus-group discussions (FGD), and participant observation. I collected in-depth, open-ended interviews from: 71 Karen patients and villagers who live in the Thai-Burma borderland, 20 local Karen health practitioners and staff at the SMRU, two malariologists at Japan International Cooperation Agency in Yangon, Burma, and numerous

Thai individuals. I also collected three semi-structured interviews with Thai officers, including the Director of the Bureau of Vector-Borne Disease of MOPH and eight international doctors at the SMRU. Through the SMRU's technical support, I also conducted three FGDs with Karen community health workers at SMRU clinics.

Interviews with Karen patients were conducted through ethnic Karen translators and research assistants who were native Karen speakers. Upon conducting interviews, we received oral informed consent. While unstructured interviews provided rich narratives of illness experiences and life histories (Bernard 2011; Briggs 1986), semi-structured interviews and FDG were used to gather more broadly shared health discourses and local perceptions and health-seeking behaviors (Krueger and Casey 2015).

Narratives collected through unstructured interviews gave nuanced interpretations of illness experiences and understandings of malaria. People use narratives to reconstruct a reality from ambiguous social and natural circumstances. Narratives are also shaped by morals and appropriate behaviors and feelings (Mattingly and Garro 2000: 24). They play a role in making cultural interpretations by reconstructing aspects of the social life of people and making sense of it as a discrete story (Briggs and Mantini-Briggs 2003: 77). Briggs and Mantini-Briggs claim that narratives are not often presented as sequential events of stories because memories of events often unfold in one's mind. Rather, people make a structure out of the events and attach meanings of his/her stories as they narrate. Based on this understanding, narratives of illness and social suffering provide the cultural understanding that is shared within a particular cultural setting (D'Andrade 1995). In this regard, the essence of narratives explains why things are as they are and how people make sense of their experiences out of random events, which are sometimes tragic and traumatic. By telling

stories of personal experience and expressing their emotions toward what happened to them, people project a better future and provide a listener with an alternative view.

Life stories of villagers allowed me to look into their social suffering in broader context. By studying patient narratives in a clinical setting, Saethre and Stadler (2013) claim that patient narratives should be viewed as they encompass their local circumstances and interests. Mattingly also reaffirms that stories are not neutral, and “telling a story, enacting one, or listening to one is a constructive process, grounded in a specific cultural setting, interaction, and history” (Mattingly 2000: 64). My analysis of narratives of Karen patients and health practitioners are based on this premise.

Scholars insist that narrative accounts in research settings are never neutral; the researcher’s interest, sociocultural membership (Good et al. 1994; Good and Good 2000), and even a relationship with a translator may have an impact. Nevertheless, I use narratives for my central research method because it is an act that brings personal or collective experiences to the “conscious awareness” (Ochs and Capps 1996: 23); narratives of illness reconstruct an individual’s cultural representation (Kleinman 1980) and reconstruct the meaning of their lives through stories of social suffering and illness experiences (Farmer 1989; Kleinman, et al. 1997).

My ethnography of malaria clinics was also enriched by several cross-border experiences and personal relationships with people, outside the clinics. During my fieldwork, I had opportunities to cross the international border multiple times, both legally and illegally.¹⁶ In some cases, I accompanied a SMRU medical doctor, who was able to travel

¹⁶ The only time I crossed the international border legally was in May 2013, when I entered Yangon from Bangkok by an international flight with a valid visitor visa and stayed for about two weeks. The rest of border-crossing occasions were illegal; however, I had local guides and in no case did I stay overnight in Burma.

throughout the Karen border villages in Burma, to assess the malaria situation. In other occasions, my research assistants accompanied me on visits to Karen villages near a SMRU clinic and agricultural fields. I also attended a Karen military anniversary parade by the Democratic Karen Buddhist Army (DKBA) in a Karen village in Burma. However, whenever I crossed the border, I was not allowed to stay overnight due to political instability and because there was no guarantee for the safety for illegal visitors.

During my fieldwork, I was affiliated with the Faculty of Sociology and Anthropology at Thammasat University of Thailand. This affiliation status gave me a moderate distance and independence in conducting research beyond the SMRU's interests. I sat in a business meeting with the vector-borne diseases officials at the Thai regional vector-borne disease control office in Mae Sot City, and also conducted semi-formal interviews with Thai officers at the Bureau of Vector-Borne Diseases at the Ministry of Public Health (MOPH). I observed how SMRU had been balancing the demands of their global health agenda with those of local needs, including the people and the government. These fieldwork data gave me a nuanced view of the SMRU as an international malaria research unit.

In summary, I use grounded theory to analyze my qualitative data (Bernard 2011). My qualitative data were collected through interviews, participant observations at the research and clinic settings, as well as archival research on the Karen. By combining multiple qualitative methods, I aim to shed light on experiences that do not emerge from statistical data. This analysis also applies to the Karen patients who travel to the malaria clinics for treatment. They experience the infectious disease socially, politically and biomedically. Along with narratives, I utilize the political economy approach to analyze how malaria is discussed and experienced by various actors in the borderland.

7. Overview of Dissertation

Part I introduces the broad ethnographic context of the location, people, and global health interventions for malaria. Chapter 1 describes the epidemiological and biomedical knowledge of malaria, in addition to the background history of global health efforts to control drug-resistant malaria in the Thai-Burma border. I describe how scientists, including epidemiologists, entomologists, and clinical practitioners understand malaria as a biological infectious disease. In addition, I also discuss how social scientists and behavioral studies have studied malaria.

Chapter 2 examines the historical background of global health interventions for malaria in conjunction with colonial medicine and tropical medicine. I analyze how multilateral cooperation in global health interventions for malaria has shifted from eradication to control, then elimination. I also investigate the history of multi-drug resistant (MDR) malaria parasites in the Thai-Burma borderland, and how the drug-resistant malaria in the Thai-Burma borderland has been discussed as part of a global health agenda.

Chapter 3 illustrates the space, people and official public health discourses on malaria related to undocumented Karen migrants in the Thai-Burma borderland. First, I establish the research setting in Mae Sot as the borderland, which I describe as politically and socially ambiguous, precarious, and fluid space. The Thai-Burma borderland not only entails various ethnic minority peoples such as Karen, Mon, Karenni, Burmese, and Muslim Rohingya migrants from the Rakhain State, but it also shares spaces called the “black zone”¹⁷ which is located in ethnic-conflicted areas in Burma. I will describe the health access

17 The Burmese government distinguishes their country space based on colors: white, gray, and black. The white zone is pro-government region, where access from outside is not prohibited. The gray zone is governed by the Burmese government and anti-government ethnic minority groups. Finally, the black zone is the designated as spaces which are controlled by ethnic minority guerillas anti-government ethnic minority groups. In areas classified as the black zone, the Burmese government does not allow foreign humanitarian aid organizations and

in the black zone, the political economy of the borderland, and Thai discourses on malaria relating to the undocumented Karen migrants.

Part II moves on to an ethnography of the clinics at the Shoklo Malaria Research Unit (SMRU) and various people who were involved in the international malaria research institution. In Chapter 4, I describe the history of the SMRU, everyday practices at the clinics, and interactions between the various players. The main objective is to situate everyday practices at the clinics as part of global health interventions, and analyze how global and local agendas, as well as the biomedical research and humanitarian efforts, cross at the ethnic conflict zone in the Thai-Burma borderland. The chapter provides a sketch of the SMRU as a malaria research institution and the discursive links between global health agendas on the drug-resistant malaria and practitioners' views on malaria and their practices. Chapter 4 also investigates technologies and detailed clinical practices at the SMRU to examine biomedical practices in clinical settings and analyzes how malaria is found and dealt with as a biological disease. Rather than simply describing how technologies are used at clinical intervention sites, I illustrate the ways in which practitioners interpret malaria as a health problem of particular severity in the Thai-Burma borderland, and deal with data and technologies to find solutions.

Chapter 5 focuses on patient perspectives regarding their body, illness, and biomedical experiences at the SMRU clinics. This chapter serves as an analysis of the impact of the biomedical interventions on undocumented Karen migrant patients and their views of the illness and the body. Ethnographic sketches investigate what cultural meanings patients

grassroots groups to operate any activities. As of April 24, 2013, when I was conducting my fieldwork, this classification still existed. See the map of restricted areas in Burma posted by an independent non-governmental organization, Tourism Transparency: <http://www.tourismtransparency.org/no-go-zones-changes> (accessed June 22, 2018)

attach to those technologies, taking a few biomedical inventions—microscope, rapid malaria test kit, and anti-malarial drugs—as examples.

Chapter 6 concludes Part II and serves as the last chapter of this dissertation. I return to the undocumented Karen migrants in the Thai-Burma borderland and how their lives have been interrupted by various life experiences, illness, and the political economy of the borderland. I shed light on their narratives of suffering and violence experienced while living in the borderland. The three vignettes illustrate the hardships of undocumented Karen migrants living in Burma due to poverty, structural inequality, and the violence surrounding them.

In conclusion, I discuss the migrant experiences of malaria in the Thai-Burma borderland and the biomedical interventions at the Shoklo Malaria Research Unit (SMRU) to illustrate the borderland as an emerging global health intervention site due to drug-resistant malaria. Epidemiological urgency has repositioned the borderland to be the frontline of health interventions through multilateral collaborations with various actors, both local and international. Such health care needs for undocumented migrants have reshaped the borderland as a task-force zone that specifically aims to eliminate malaria and views the Karen as a vulnerable population in need of health interventions. Furthermore, the experiences suffering of the Karen migrants due to their ambiguity in ethnicity and citizenship puts them in a politically vulnerable position on both the Thailand or Burma side of the border. This perspective has slipped away from the technology-centered, specific-disease focused biomedical interventions by the SMRU.

CHAPTER ONE

THE BIOMEDICAL KNOWLEDGE OF MALARIA

Despite prolonged and orchestrated international efforts aimed at eliminate malaria from the world population, malaria is still considered a significant public health threat to millions of people in the world, particularly in economically disadvantaged countries. People who have scarce or inadequate access to healthcare due to poor governance, economic constraints, and environmental degradation, disproportionately bare the world's malaria burden. The main goal in this chapter is to clarify the biological aspects of malaria before we discuss the social, historical, and political/economic aspects of the disease in the following chapter. This chapter serves as the introduction to understand why malaria is still an important infectious disease for people who have been experiencing the disease biologically, socially, and politically. The biological background of the disease is important to understand the health interventions provided by international malaria researchers.

Thus, the first chapter of this dissertation discusses the way scientific knowledge about malaria is presented in biological and epidemiological perspectives. To discuss the global health praxis on malaria interventions, biomedical explanations should precede the rest of the chapter. Focusing on the biomedical facts, the first section of this chapter describes the biomedical aspect of malaria: its natural history, epidemiological data, transmission, human-nature co-evolution, plasmodium types that affect humans, and the drug-resistant parasites. The second section explores antimalarial drugs, such as chloroquine, artemisinin-derivatives, and other synthetic malarial drugs and drug-resistant malaria parasites. The history of antimalarial drugs is important because it gives an idea how soon a drug-resistant parasite emerges after finding a powerful medicine, and how urgent it sounds the global health alarm on controlling drug-resistant malaria. I will specifically focus on

P.falciparum, the deadly malaria parasite that has developed resistance to artemisinin, which is currently used as the first-line treatment for uncomplicated *P.falciparum*. The third section discusses genetic traits that have developed in some human populations that have been exposed to malaria in their environment for generations. While some genotypes function as a protection from developing severe malaria, other types work against a particular antimalarial component. Such genetic disorders require special attention. Particularly, I examine the G6PD deficiency among the Karen population; the genetic disorder is used as a marker of risk groups for health interventions by the SMRU.

While 90 percent of the world malaria cases occur in Africa, this dissertation focuses on the second largest malaria incidence area: the borderland in Southeast Asia. Despite its relatively low endemicity, the borderland has become one of the epicenters of global health interventions for malaria by multinational, and multilateral cooperation due to the emergences of multidrug resistant malaria parasites. The complexity of disease control in the borderland is further complicated by the cross-border populations and their life styles.

The fourth section discusses malaria in some of the intervention sites: malaria research clinics run by international researchers in the Thai-Burma border area. The last section of this chapter wraps up theoretical approaches to malaria and how I approach understanding the various ways, in which malaria affects people in the Thai-Burma border in particular. The study of malaria needs to be examined both from natural science and social science perspectives to fill the theoretical gaps as well as the gaps in the social reality and global health agenda. Furthermore, throughout the entire dissertation, I claim that malaria is a biosocial disease that is closely linked to the political and economic aspects of human activities and inequality in access to care. The goal is to examine malaria from the local

perspectives through people's understanding of malaria in the Thai-Burma borderland, both the biocultural approach and critical medical anthropological theories, provides the ways to look at the inequality of health, the biosocial construction of the disease, and politics of global health interventions.

1. Biomedical Knowledge and Epidemiology of Malaria

Malaria is a *Plasmodium* parasite disease transmitted through a bite by an infected female *Anopheles* mosquito, which is the main vector of the disease. The disease still affects 216 million people yearly globally, of which ninety percent of cases are concentrated in Africa. The next highest prevalence is found in Southeast Asia. Each year, an estimated 3.2 billion people, nearly the half of the world's population, are reported to be at risk for malaria in 91 countries. As a single cause of mortality, it caused 445,000 deaths in the world in 2016, about the same number reported in 2015 (WHO 2017), of which, 90% were children under five years of age (WHO 2014).

Malaria cases reduced significantly by more than 45% between 2010 and 2016 (WHO 2017). For a balanced estimation, malaria incidence¹⁸ is often used. The incidence rate of malaria globally also declined from 76 to 63 cases per 1,000 people from 2010 to 2016, and in the WHO's African Region, malaria incidence reduced from 265 to 206 cases per 1,000 during the same year period (WHO 2017: 38). In the WHO's Southeast Asia Region, the malaria incidence (48%) was the largest among all WHO regions.

However, some studies claim that the WHO's estimated morbidity and mortality from malaria is underestimated. A report by Deborah McKenzie (2012) argues that impoverished African nations do not have the infrastructure necessary to accurately monitor

¹⁸ Incidence refers to the number of cases per 1000 population at risk.

malaria cases, and the actual malaria related deaths was 1.2 million worldwide in 2010, nearly the twice the WHO's estimated 655,000 deaths. The same article claimed that the actual malaria mortality of all ages outside of Africa was 1.8 times more than the WHO estimated number (ibid.). This new analysis of malaria morbidity and mortality was conducted by the Seattle-based Institute for Health Metrics and Evaluation (IHME), which challenges the WHO's estimates by using technological innovations. To be fair, the WHO also points out the inconsistency and discrepancy in their estimated data. A WHO report (2017) states that in many countries, especially in sub-Saharan Africa, the surveillance systems are unreliable because data often come from the public sector only, and not all public sectors function properly (WHO 2017a: 33).

The goal for global malaria elimination is still a distant hope, despite the long history of the global health efforts and billions of dollars spent each year in malaria control programs. Investment outlook shows that in one year, there was an estimated U.S. 2.7 billion in malaria control and elimination efforts worldwide (WHO 2017a), of which more than half (57%) of the resources came from the Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM) by the Global Fund. The vast majority of the investments was spent in the WHO African Region (74%), followed by the WHO region of South-East Asia (7%) (ibid.).

As a plasmodium disease, malaria has a very unique natural history. It undergoes several stages in both human and mosquito bodies. There are 30 to 40 different species of *anopheline* mosquitoes that convey malaria plasmodia to humans. A female mosquito acquires malaria by biting an infected person, and then parasites reproduce in the mosquito's gut, which enables parasites to multiply. When a mosquito feeds on humans, gametocytes are injected into the blood and travel to the liver within minutes. In the human liver, sporozoites

asexually produce merozoites (female and male cells) in the liver cells. After one or two weeks, the affected liver cells burst and release merozoites into the blood. The time frame between when the pathogens enter a human body and until symptoms appear is referred to as the incubation period. Thus, even when a person is bitten by an infected *Anopheles* mosquito, s/he often does not have symptoms immediately. When merozoites are released into the blood, and start attacking blood cells, a person has an onset of symptoms.

Typical malaria symptoms are cyclical fevers, headache, chills, joint pain, and jaundice. In some serious cases, it can cause seizures (especially among children), organ failure and brain inflammation (WHO 2013). Although the biomedical explanation describes common malaria symptoms, it is not easy to diagnose a malaria infection simply by observing symptoms from outside, even by trained health practitioners.¹⁹

There are mainly four types of malaria parasites that can infect humans, including *Plasmodium falciparum* (*P.falciparum*), *Plasmodium vivax* (*P.vivax*), *Plasmodium malariae* (*P.malariae*), and *Plasmodium ovale* (*P.ovale*). One person can have more than one type of *plasmodium* infections at a time, especially in malaria endemic areas. In the *P.falciparum* case, typically, one develops symptoms after 9-14 days after a mosquito bites; 12-18 days for *P.vivax* and *P.ovale*; and 18-40 days for *P.malariae*. However, *P.vivax* can have an incubation period of 6-12 months (Heymann et al. 2015). The incubation period for *P.vivax* is called a dormant stage in which parasites can remain unnoticeable even after completing treatment and can be hiding in the infected person's liver without causing major health

¹⁹ There are several reasons for this. In malaria endemic areas, some adult patients have developed a tolerance to malaria parasites due to multiple infections in the past. Also, patients sometimes do not complete the full treatment course after initial symptoms disappear, but symptoms are suppressed temporarily. In some cases, children infected with *P.falciparum* can be asymptomatic until their health condition deteriorates. If the parasite type is *P. vivax*, malaria can hide in the patient's liver for a long time and relapse (Personal interview with Dr. Francois Nosten, in March 2011).

problems for several months and even years after treatment. Thus, the *P.vivax* parasite can cause relapses of symptoms, and can be spread to other people without being noticed by the parasite's human host.

In most of Southeast Asian countries where malaria has been under control such as lowland Thailand, *P.vivax* and *P.malariae* are dominant. While *P.vivax* is the majority type in Thailand, *P.falciparum* kills more people and is still a major health threat to the population in Burma and the border communities (WHO 2014). Of the four species of malaria parasites that affect human populations, *P.falciparum* is known to cause severe malaria²⁰ and complicated cases such as organ failure, brain inflammation and sudden death. A person with *P.falciparum* develops acute symptoms of high fever, body ache, sweat. If the patient has low immunity and is not treated with antimalarial drugs immediately, then it can result in cerebral damage. In this dissertation, I focus on *P.falciparum* because of the drug-resistance that has been attained and the history of controlling *P.falciparum* in the region. Transmission of *falciparum* malaria is often correlated with deforestation, due to slash-and-burn agricultural activities, dam construction, logging activity, and plantations. In Thailand, the “imported” cases of *P.falciparum* are seen among migrant populations. Due to its acuteness and severity, the emergence of *P.falciparum* resistance to antimalarial drugs is considered the most serious public health threat and has thus received more attention than the other strains.

To detect malaria parasites in one's blood, rapid diagnostic tests (RDTs) are widely used and are easy to conduct; however, the World Health Organization recommends every suspected case should be tested by a microscopic method to identify species, parasite density in the blood, and parasitic stages (WHO 2005). Some research laboratories also use

²⁰ Severe falciparum malaria refers to an acute condition with signs of severity and/or evidence of vital organ dysfunction (WHO 2015:5).

polymerase chain reaction (PCR) based assessments, but this is not widely available due to the cost of the machine and highly skilled data interpreters. Thus, malaria intervention programs need both human resources and sufficient funding to train lab technicians not miss the disease agent in blood smear specimens.

The main risk groups of malaria infection from *P.falciparum* are pregnant women, small children under five years old, people who are immunosuppressed, and the elderly (Heymann 2015). Pregnant women and small children are identified as particularly vulnerable groups. Although a vertical-transmission (mother to child) has not yet been clinically proven, malaria during pregnancy increases the risk of maternal deaths,²¹ miscarriage, stillbirth, low birth weight, and neonatal death due to insufficient oxygen in the red blood cells affected by malaria parasites (Heymann 2015). However, even when malaria parasites are detected, safe antimalarial pharmaceuticals are limited for pregnant women or lactating mothers. The drug safety clinical studies on pregnant women is a field that is hard to pursue because of the unknown adverse drug impacts on the fetus. That is why the SMRU has a reputation in the field of clinical studies of malaria. One of the Dutch medical doctors at the SMRU told me during a personal interview:

I think one of the reasons why SMRU focuses on malaria in pregnancy is because, the research on antimalarial drugs for pregnancy is not done in many places. Now malaria cases are going down, and we don't have so many cases anymore here [in the Thai-Burma borderland]. But the problem is, if you look worldwide, nobody dares to do research on malaria during pregnancy because if you give medication, you don't know what'll happen to the baby and mother. Also, (one's) pregnancy affects the drug efficacy. When women are pregnant, their blood volume is larger, so they will get lower concentration of the drug in their blood. So what they [SMRU research doctors] do here is very important research.²²

²¹ The rate of mortality from severe malaria in pregnancy is reported to be approximately 50% (Heymann 2015: 385).

²² Personal interview with Dr. G, April 19, 2013.

The Director of the SMRU also explained that in much clinical pharmacokinetic research on malaria, pregnant women are systematically excluded from clinical studies of antimalarial drugs, and, therefore, there are only a few alternative drugs options available (Nosten et al. 2007). Dr. Nosten, and other international research doctors at the SMRU often used expressions such as “time is ticking” or “we are in the battle with time” when they described their efforts to contain multidrug resistant parasites in the borderland by finding effective antimalarial drugs. The history of malaria in the Thai-Burma borderland clearly showed the fastest pace of malaria parasites to develop drug resistance toward multiple prophylaxis (WHO 2005); therefore, the SMRU international doctors always stressed that their mission was to save not only populations in Thai-Burma borderland, but also the world population, especially in Africa and India where antimalarial drugs were insufficient to save large populations.

There are two ways to control malaria: vector (mosquito) control and parasite control (pharmaceutical drugs). Vector control includes the use of insecticide-treated mosquito nets (ITNs), indoor residual spraying (IRS)²³, and cleaning the mosquito habitats surrounding households. According to the WHO, a total of 582 million ITNs were delivered globally by manufacturers between 2014 and 2016. Among them, 505 million were distributed in the sub-Saharan African region (WHO 2007: xiii). Globally, IRS use and protection declined from a peak of 5.8% in 2010 to 2.9% in 2016 (WHO 2017: xiv). Compared to ITNs, the IRS measurement remains low because it is difficult and costly to implement. IRS requires a

²³ IRS method involves spraying the inside walls of dwellings with insecticides.

determined and stable local administrative sector, which would take initiatives to launch the mass spraying project.

In the Thai-Burma borderland, where the majority of migrant villages lack clear leadership and a political structure, the use of ITNs is the best preventive measure by which individuals can control their health outcomes. However, at the SMRU clinics in the Thai-Burma borderland and elsewhere in global health interventions sites for malaria, ITNs are often neglected or less stressed in comparison with other parasite control methods. To date, ITNs are distributed to malaria patients and their families for free at the SMRU from the funding from the Global Fund. However, interviews with Karen patients at the SMRU showed that when migrants went to work in the forest for lumber and agricultural work, they did not necessarily use mosquito nets because there was no place to hang the ITNs in the middle of jungle, according to the informants (interviews with various Karen patients at SMRU clinics from 2011 to 2013). As such, the effective use of ITNs in the mobile populations and malaria burdened areas should be carefully investigated.

In the history of malaria, it is reported that European countries emphasized vector control, while the United States focused more on parasite control (Greene et al. 2013). In contemporary global health, despite recommendations from the WHO and Global Fund, global health actors such as local health clinics and academic research groups focus on parasite control through administering antimalarial pharmaceuticals. A 2017 WHO malaria report shows that the allocation of funds for malaria research and development from 2010 to 2015 has distributed a significant portion of its investments into ‘drugs’ (US\$ 1265 million), followed by ‘basic research’ (US\$ 999 million), ‘vaccines’ (US\$ 798 million), while the ‘vector control’ received only US\$ 191 million (WHO 2017: 6).

While I am not ignoring the problem of an overemphasis on parasite control in malaria control measurement, due to the clinical research environment in my fieldwork sites, I will mainly focus on the pharmaceutical aspect of the malaria control. The problem of focusing primarily on parasite control and not combining it with vector control will be addressed later on in Chapter Two.

2. Antimalarial Drugs and MDR Malaria Parasites in Thai-Burma Borderland

Malaria is a preventable disease with antimalarial drugs. Various types of antimalarial drugs are clinically used under the WHO guideline. Chloroquine is widely used for the treatment of *P.vivax* malaria all over the world, and mefloquine is used to clear *P.vivax* parasites during the dormant stage (liver-stage). Artesunate, a first-line treatment for severe malaria²⁴, is often given intravenously or intramuscularly. For severe malaria, artemether and quinine are also given by IV and IM as alternate treatments. If it is tolerated, mefloquine tablets, which make patients very dizzy and can induce vomiting, is administered as a combination drug with artesunate for oral use. The combination therapy is called artemisinin-based combination therapy (ACT), and it is currently the first choice for uncomplicated *P.falciparum* malaria cases in most endemic countries.

The Thai national malaria treatment guidelines include primaquine as a first-line drug for prevention of relapses in *P.vivax* and sometimes *P.falciparum*, but according to MOPH, some regional Thai hospitals do not strictly follow the guidelines especially in areas with high prevalence of Glucose 6-Phosphate Dehydrogenase (G6PD) people, because the drug has side effects on the genetic disorder (WHO 2011:24). SMRU malaria guidelines suggest

24 Severe malaria is a medical emergency. Most of the severe cases are caused by infection with *P.falciparum*, but *P.vivax* and *P.knowlesi* can also cause severe malaria.

that primaquine should not be used for other patient groups, such as pregnant women, lactating women, and infants (SMRU 2011); however, one of the medical doctor at SMRU and a Thai malaria expert outside of SMRU reported me that the low-dosage amounts of the drug were once used to test on pregnant women for the purpose of drug-trial studies.

Other ACT artemisinin derivatives, such as artesunate, artemether, and dihydroartemisinin (DP), are used for uncomplicated *P.falciparum* in combination with other drugs such as piperazine with DP, artemether-lumefantrine (ALN) and Coartem. However, these ACTs are not currently recommended by Thailand MOPH as first-line treatments for uncomplicated *P. falciparum*, while at the SMRU they are used on malaria cases among migrant populations. Again, there is a gap in malaria case management and pharmaceutical governance between the SMRU and Thai MOPH.

The term antimalarial drug-resistant malaria is described as “the ability of a parasite strain to survive and/or multiply despite administration and absorption of an antimalarial drug given in doses equal to or higher than those usually recommended, provided that drug exposure is adequate” (WHO 2015: 113). In other words, delayed parasite clearance observed after treatment with antimalarial drugs or a recurrence of malaria after a proper treatment course is included in cases of antimalarial drug resistance. To evaluate the pharmacokinetic efficacy, assessment of clinical and parasitological outcomes of treatment are necessary. If the total treatment failure rate is more than ten percent, one thing that epidemiologists suspect is drug resistance.

Interestingly, when most of the population has less access to biomedical drugs, drug resistance in malaria parasites is less likely to occur. Resistant parasites are found in places

where people have certain levels of biomedical exposure, and people use antimalarial drugs inappropriately.

In the Greater-Mekong Sub-region (GMS) in Southeast Asia, multidrug resistant malaria parasites have been reported in many epidemiological studies (WHO 2015). Borderlands in Southeast Asia, particularly the Thai-Cambodia and Thai-Burma borders, are known to be hotbeds of several types of drug-resistant malaria. When gem mining started operating in the 1950s along the Thai-Cambodia border, chloroquine-resistant *P. falciparum* emerged in the border region. The parasite strains which appeared in the Thai-Cambodia border in the late 1950s later spread to Africa within a few decades (Parker et al. 2015). Gem mining brought many migrants to Thailand from Cambodia and some migrant workers were from Burma, Bangladesh, and India, where migrant workers were exposed to forest malaria, *P. falciparum*, during mining in deforested areas. Due to the distance from towns and lack of health coverage for migrants from foreign countries, public health researchers reported that antimalarial drugs were used as an immediate treatment. Moreover, it was not uncommon that even though migrant workers received diagnosis and treatment at hospitals, they did not necessarily complete the antimalarial drug treatments because of the side effects and the economic pressure to return to work. The combination of the mobility of the population, lack of health access, and lack of adherence to the malaria regimen among the migrant workers was reported to be contributing to the emergence of drug resistance along the Thai-Cambodia border (Harinasuta et al. 1965; Wongsrichanalai et al. 1991).

Migrant workers and refugees in the borderland are particularly vulnerable populations due to limited access to the government-subsidized healthcare facilities and their frequent movements. By the end of 1970s, the combination drug of sulfadoxine and

pyrimethamine, and mefloquine which were effective in treating *P.falciparum* after the emergence of chloroquine-resistant parasites. Artemisinin-resistant *P.falciparum* emerged in the Thai-Burma borderland in the 1980s. The reason for the emergence of the drug-resistant malaria in the Thai-Burma border, and how it moved from the Thai-Cambodia border, is not well known. However, a political insurgency which lasted over half a century coupled with the collapse of public health infrastructure are believed to be the main factors of their malaria situation.

The malaria report singled out the GMS, including Cambodia, Burma, Thailand, Laos, Vietnam, and China as the epicenter of the drug-resistant malaria. At present, a WHO report indicates that about 120 million people are at risk for malaria in the GMS, and in 2012 there were 1.8 million malaria cases reported in the same region (WHO 2015). Among those positive malaria cases, about 58% were due to *P. falciparum*. Aside from the technical operations, it is clear that disease control in the GMS is now a pivotal area that needs urgent global health attention due to the political situation and the social aspects in the cross-border activities that complicate health interventions. Epidemiologists have warned that it is only a matter of time and that soon the artemisinin-resistant malaria will affect other regions in the world. Experts claim that spreading artemisinin-resistant strains from the GMS Southeast to other resource-deprived countries such as India and Africa might be a catastrophe.

Due to the urgent threat to the public health and the epidemiological situation, the GMS in Southeast Asia became one of the intervention target sites of global health partnership efforts. The Mekong Roll Back Malaria (RBM) project is a joint initiative between the Asian Development Bank (ADB), WHO, and the countries of GMS, which is established by the WHO and United Nations Children's Fund (UNICEF) (WHO 2014).

The proliferation of multi-drug resistant malaria in the GMS is associated with the diverse ethnic minority populations and highly mobile population movements in the region. Control programs thus target the high-risk populations in ways that consider their socioeconomic situations. Although cultural backgrounds of ethnic minority groups are considered relevant to the control programs (Singhanetra-Renard 1986), most of the studies are still centered on the parasites and mosquito vectors. Therefore, social behaviors of the affected people and political economic factors that prevent them from seeking care need to be further investigated.

3. Natural Immunity and Genetic Disorder

Malaria is a treatable disease and, if diagnosed early and treated with biomedical drugs properly, it can be cured without major complications in most cases. There are several chemoprophylaxis options based on the parasite types, stages of the parasite, and risk groups (pregnant, lactating women, small children, and severe genetic disorder, such as G6PD patients). Based on the WHO malaria treatment guideline, each government and clinical research institution chooses their best available treatment options. Because of the emergent drug-resistant malaria, combination therapy are highly recommended for treatment of uncomplicated *P.falciparum*. The most commonly used combination therapy is artemisinin combination therapy (ACT) with mefloquine for three days, which has been established by SMRU and is now widely used to treat *P.falciparum* in other parts of the world.

There are populations which have a natural resistance to malarial infections. One of these is found in Africans and African descendants who have expressed sickle-cell traits. Normal human red blood cells have an oval, donut shape, but a red blood cell that is affected by the sickle-cell disorder has a crescent-moon shape. Patients who genotypically

heterozygous for sickle-cell do not have any symptoms but they can pass the genotype to the next generation. Heterozygous people are protected from relatively low parasitemia when infected with plasmodium. Even if they are infected with a deadly malaria type, they are somewhat protected from developing severe symptoms. Homozygous patients on the other hand suffer from severe anaemia and they are also at increased risk of fatal malaria (Heymann eds. 2015).

A genetic disorder that provides protection against severe *P.falciparum* malaria is glucose-6-phosphate dehydrogenase (G6PD) deficiency, which is prevalent in populations of Southeast Asia. The prevalence of G6PD deficiency within populations is high in malaria endemic locations (Panich 1981). Some molecular studies found that in Thailand, approximately 10% of male newborn children are deemed to have G6PD deficiency, while female counterparts have a smaller percentage (Iwai et al, 2001; Nuchprayoon et al. 2002). The Thai western border population including the Mon, Burmese, and Karen are reported to have a high frequency of G6PD deficiency (Phompradit et al. 2011). One extensive study with a large number of study populations found that among the Karen and Burmese ethnic groups in the Thai-Burma borderland, 13.7% of the patients who presented at the SMRU clinics were found to be G6PD positive (Bancon et al. 2014).

Given the high prevalence of G6PD deficiency in the population, the Karen in the Thai-Burma borderland along with other ethnic groups who live in the malaria endemic borderland are considered a group potentially at high-risk. Because primaquine, the standard treatment for *P.vivax*, can cause harmful effects on the G6PD deficiency patients, an additional diagnostic test for the deficiency, which is not always available at small border malaria posts operated by the Ministry of Public Health in Thailand, is necessary. Contrary to

Thai malaria posts, the rapid G6PD test is required for all malaria febrile patients at SMRU clinics. Therefore, the administration of primaquine for malaria patients was a controversial issue between Thailand MOPH and SMRU at the time I was conducting research in 2011-2013. When I visited the Bureau of Vector-Borne Diseases, a female entomologist told me with a slightly upset expression:

In Mae Tao Clinic²⁵ in the Tak Province, they check G6PD on patients. It is recommended by the Border Malaria Guideline made by SMRU! It is not MOPH policy to test G6PD because previous studies proved that the deficiency prevalence was not so common among Thai population, about ten percent of Thai people.²⁶

Asked which group she included as Thai people, she replied: “If you have a Thai ID card, we call them Thai people. Even if they do not speak Thai, they are Thai as long as they have Thai ID” (ibid.). Then, Ms. P explained to me that the malaria guideline was initiated by the SMRU not the Thailand MOPH. When the Director, Dr. Wichai Satimai, came back from another meeting and joined my interview, Ms. P, still upset, told the story which she just mentioned to Dr. Wichai. She was against the fact that SMRU had more influence on deciding malaria regimen guidelines in the Tak Province of Thailand, and other NGO groups in Mae Sot also followed the guidelines. Dr. Wichai explained to me:

We are not afraid of G6PD in Thailand. In Myanmar, government’s regimen uses primaquine, but Cambodia and Laos don’t use primaquine because they have G6PD in their populations. Among Thai citizens, approximately ten percent is found to be G6PD for male and twelve percent among females. There are Mahidol strain, and Vientiane, Hong Kong strain. We [Thailand MOPH] meet Myanmar government four times a year and discuss how we decide on our regimen and exchange malaria situation among migrant population. But Tak Province [where I conducted most of my fieldwork] is not an ordinary place among other Thai border areas, because the

25 Mae Tao clinic opened in 1989 by a female Burmese doctor, Cynthia Maung. The clinic is operated by donations from international societies and governments in Mae Sot City in the Tak Province. Today, it serves approximately 150,000 people in the Thai-Burma borderland, and among them, about 50% are from Burma.

26 Ms. P, entomologist at the Bureau of Vector-Borne Disease at MOPH, April 19, 2013.

area opposes the Myanmar government.²⁷

Dr. Wichai, too, seemed a little uncomfortable with the dominance of SMRU over the regional malaria guidelines that ignored Thai MOPH malaria guidelines, though his reaction was less observable than in Ms. P.

From the previous section, I have described that between Thai MOPH and the SMRU, there were gaps in the malarial treatment choice and management of risk groups, such as G6PD patients with malaria treatment. These discrepancies sometimes emerge as “frictions” (Tsing 2005) between a local government and international research groups within the state. For example, some international doctors jokingly boasted to me that their research on antimalarial drugs was advanced, so that they could get away with the regulations and guidelines laid down by Thailand’s MOPH. On the other hand, Thai MOPH officers told me that in the past, SMRU did not abide by the MOPH malaria guidelines, and conducted clinical research on pregnant women with antimalarial drugs that were not approved by the government. Such mistrust between the two parties might affect the dialogues and collaborations to develop better regimens for the populations, including migrants, refugees, and various risk groups.

The next section discusses SMRU as an international malaria research institution located in the Thai-Burma borderland, and what role they play in global health agendas on malaria control.

4. Malaria Research at Shoklo Malaria Research Unit (SMRU)

Since SMRU started its first clinic in a refugee camp, by French physician Dr. Francois Nosten in 1986 and two female Karen staff, it has expanded the operation to five

²⁷ Interview with Dr. Wichai Satimai, Thailand MOPH, April 19, 2013.

clinics located in Thailand, a TB-HIV/AIDS clinic in a border village in eastern Burma, and numerous health dispensaries in the border region. Dr. Nosten is an influential figure in the malaria research field because of his pioneering clinical studies and his team's humanitarian work at the SMRU. The main work at the SMRU is to provide malaria treatment and to conduct malaria-related research: such as, new drug efficacy; parasite clearance by existing old drugs; safe dosage of malaria drugs during pregnancy; vertical transmission of malaria from mother to child through placental infection and so on. Dr. Nosten mentioned in a couple of interviews that he believes the two directions of both treating the disease and conducting clinical studies give the best result in controlling malaria among the affected population.

Motivation to save local people's lives and aspiration for medical science improvement come hand-in-hand at the SMRU. Because the population is in danger without the SMRU's free medical care, the SMRU's humanitarian aid in the public health field gives lifesaving support to the economically and politically devastated borderland population. On the other hand, because of the malaria environment, the population is involuntarily taking a role of being a target population in clinical experiments. One can argue that the patients are voluntarily participating in clinical studies in exchange for getting healthcare access with a minimum monetary compensation. However, in a society, where people do not have many health care options, the combination offer of treatment and clinical studies become a double-edged sword. Thus, the logic in improving the health environment in poor-stricken communities is inseparable from the nature of neoliberalism in global health and political economy of the ethnic conflicts in the Thai-Burma borderland.

Many social scientists argue that global health decisions are infiltrated with neoliberal values since the 1980s: the market-oriented, human capital model pursuing cost-effective and

evidence-based performance in the public health field (Adams, 2013; Cuerto 2013). Clinical research conducted at SMRU is under the supervision of Mahidol Oxford Tropical Medicine Research Unit (MORU)²⁸, an academic collaboration between Thailand and England. Normally, if a foreign scientist group is to conduct a clinical study in Thailand, it will take a significant long period, due to their strict ethical reviews; however, because SMRU is connected to a prestigious medical school in Thailand, they can bypass the exhausting ethical reviews that apply to foreign researchers. Instead, they only need to satisfy the ethical review boards at Oxford and their partnering university in Thailand. This expedited ethical review process gives the SMRU an advantage when collecting data from clinical trials on antimalarial pharmaceutical drugs that are not yet approved for use on the populations in Thailand by the Thailand MOPH.

The Thai government welcomed the international research groups to collaborate with local medical universities to treat “foreign” populations and conduct clinical studies on the people, because of the public health burden on the Thai population along the border due to the movement of malaria-sickened migrants. This is a similar situation seen in the development of tropical medicine. The field of tropical medicine developed in the times of colonialism. Improving the hygienic environment and surveillance of ill individuals among the local population became important tasks for colonizers, because the manpower loss due to tropical diseases not only affected the white populations but also the economic loss (Comaroff 1993; Lock and Nguyen 2006; Anderson 2006). The Thai government’s narratives on the migrant populations that are ethnically different from Thais are somewhat mixed: they

28 MORU in Thailand was established in 1979 as a research collaboration station between the Faculty of Tropical Medicine at Mahidol University in Thailand, Oxford University and Wellcome Trust in the United Kingdom. MORU’s main office, which is located in Bangkok, supervises field clinics and research sites that spread in Southeast Asia, South Asia, and Africa (The Democratic Republic of Congo).

are trouble-makers who illegally move into Thailand and work; on the other hand, these migrant populations are an important source of manpower for Thai employers in the agricultural field and manufacturing industries along the border. Among the ethnic minorities from Burma, the Karen are also considered as victims who fled from the oppressive Burmese military junta. Thus, the SMRU and other NGO clinics along the border are collaborators with the Thai government.

The financial venues of the SMRU mostly comes from the British-based science research philanthropic institute, the Wellcome Trust.²⁹ However, various institutions, such as the Global Fund to Fight HIV/AIDS, Tuberculosis, and Malaria (GFATM); the European Union (EU); the United Nations for Children's Fund (UNICEF); and the Bill and Melinda Gates Foundation come into play. There are also private pharmaceutical companies which provide expensive molecular diagnostic equipment such as PCR and DNA sequencing instruments which are used to sequence malaria parasite genomic information, and incentives to the research doctors at SMRU. Preventive measures, such as insecticide-treated mosquito nets (ITN) and mosquito repellent creams from a Thai private company are also distributed to patients at the SMRU clinics. The partnerships between the public and private partnerships (PPPs) are one of the central keys to global health interventions. The PPPs intend to distribute resources to places more in need and in a transparent manner. The national governments thus need to collaborate with private sectors, NGOs, academics, and international research groups such as SMRU to receive funding resources from global health counterparts, such as the Global Fund (Cuerto, 2013). Thus, the decentralized Thailand

²⁹ The founder of the Wellcome Trust, Sir Henry Wellcome, was originally an American citizen. He was later given British citizenship when he moved to the UK and founded the Wellcome Trust from his huge assets. The Wellcome Trust invests in pioneering medical science research, clinical studies on infectious diseases, and pharmaceutical development.

MOPH urges their local administrations to collaborate with SMRU and other NGO clinics to monitor the malaria situation along the border.

While many governmental hospitals in economically disadvantaged countries are often short of medical and human resources as Alice Street has pointed out in her clinical ethnography in Papua New Guinean (Street 2015), the SMRU clinics enjoy abundant medical supplies and high-tech machines in the labs in the main office, thanks to the global health collaborators' contributions. As such, the SMRU's clinical environment was different from resource-deprived and poor district health clinics and village health posts in Burma side or Thai malaria posts under the Thai MOPH. In such a resource-full clinical environment, not only migrant patients, but also Thai border villagers, who suspect their symptoms are malaria-like, visit the SMRU clinics. The contrast between the SMRU and the local health dispensaries, in terms of medical resource is striking.

For migrants, the SMRU provides not only quality-guaranteed medical care, in terms of malaria treatment, but also a care environment for mother and child, the SMRU's other important objective. Thus patients, who suspect their illness is unrelated to malaria or their malaria symptoms are minor, go to find other healthcare options in their local health dispensaries or treat themselves by taking over-the-counter drugs. One such case was an urgent medical situation which was not handled at the SMRU clinic. During my fieldwork, a patient was carried into a SMRU clinic by his family. The patient was injured in a motor accident and he was bleeding severely from his limb. However, because the SMRU clinic was not equipped with emergency care and surgical rooms, the SMRU staff regretfully told the onlookers to take him to a close Thai district hospital. The patient's family was very upset at the fact that the SMRU refused to treat the injured patient.

On another occasion, a male informant in the Mae Ra refugee camp, commented that the SMRU clinic in his refugee camp was for pregnant women, not for male patients who had some chronic health problems. Although the SMRU does not openly reject patients who suffer from chronic conditions, they prefer to treat patients who are malaria-infected or a group of mothers and small children who are at risk of infections.

5. Theoretical Approaches to Malaria as Infectious Disease

Anthropologists have contributed to the study of infectious diseases from various perspectives: biological and ecological, sociocultural, biocultural, and critical medical approaches to understand the complexity of transmission of the disease, intervention, and human experience of an illness. Malaria case studies focused on the Southeast Asia region have heavily centered on epidemiological, medical, ecological, and molecular biological investigations, which are mostly country-specific case studies (Dondorp et al. 2004; Le Hesran et al. 2016; Luxemberger et al. 1996; Newton et al. 2006; Parker et al. 2015; Petney, 2001; Richards 2009). Without a doubt, transmission of malaria is often associated with human-nature interactions: subsistence patterns, agricultural practices based on seasonality, migration, and large-scale constructions (Livingstone 1958; Packard 1997). However, these ecological and molecular factors are not enough to identify the rise and fall of malaria incidence: malaria prevalence trends in the world have a strong link to global, national, and regional efforts to control the disease, as well as people's socioeconomic status, and political situations.

Many ecological and medical anthropologists claim that social inequality and poverty cause more mortality and morbidity from malaria than any other single factor (Armelagos et al. 2005; Brown 1997; Inhorn and Brown 1997; Kamat 2013; Livingstone 1958). Historian

Packard showed that the eradication of malaria from Italy, Siberia, and the Mississippi River area in the U.S. were a good example of how poverty and lack of political determination toward health improvement have contributed to malaria transmission and persistence (Packard 1997).

Furthermore, despite the fact that malaria is considered to be one of the main infectious diseases in the global health intervention efforts, and its control projects have been attracting a significant amount of global health funding every year (Cueto 2013). The impacts of such health interventions on the local populations and their experiences of suffering from the illness have not adequately been investigated from the human-centered approach and critical analysis on health interventions by comparison with tuberculosis, HIV/AIDS, and cholera (Biehl 2003; Briggs and Briggs 2003; Farmer 2003, 2006).

From the histories of the epidemics of malaria, global health experts and some epidemiologists maintain that malaria is, rather, a social disease that is caused by human-made factors, such as: poverty, conflicts, violence, deforestation, and structural inequalities in global market economy (Kamat 2013; McCombie 1995; Nyamango 2002; Stepan 2011).

The problem of endemic malaria and the emergence of the multidrug resistant malaria parasites in Southeast Asia in general and the Thai-Burma borderland in particular cannot be discussed without considering the political economy of the borderland. Yet there are virtually no theoretical discussions on the borderland in a way that contributes to understanding the complexity of malaria among the affected people from social, political economic, and historical aspect. Anthropological investigations can contribute to the study of malaria by critically examining the borderland as the intersection of people, commodity, technology, and discourses, and how they affect the people who are at risk.

To explore global health interventions for malaria in the Thai-Burma borderland, I employ biosocial approach and critical medical anthropological (CMA) theories. I use these two theoretical perspectives to analyze the significance of malaria epidemiology in the Thai-Burma borderland and the ways in which malaria affects the local people's physical and social suffering.

The biological and ecological perspective has produced rich knowledge of the coevolution of human, pathogens, and host vector mosquitoes in malaria (Cockburn 1971; Ewald 1994; Goodenough 1956; Livingstone 1958; Trevathan et al. 2008). The diffusion of swidden agriculture and deforestation have impacted habitats of insects and animals, which eventually contributed to the establishment of endemic deadly malaria in forest settlements in Southeast Asia (Butler 2008; Pattanayak and Yasuoka 2008). With the discontinuation of DDT spray and pharmaceutical pressures on populations, malaria started re-emerging in many parts of the world where it had been nearly eliminated (Brown 1997; Packard 1986). In some cases, malaria parasites develop immunity toward antimalarial drugs that cannot be killed by using standard antimalarial treatment.

In the several borderlands in Southeast Asia, where people have been exposed to antimalarial drugs, malaria plasmodia *P.falciparum* and *P.vivax* have developed drug-resistance toward chloroquine and artesunate antimalarial drugs (Phompradit et al. 2011). In human populations, genetic mutations such as sickle-cell anemia, G6PD deficiency, thalassemia, and hemoglobins HbC, HbE, and HbF have developed to protect heterozygous individuals from severe malaria (Inhorn and Brown 1997). The information of the biological aspect of malaria is important to understand global health discourses on drug-resistant

malaria and genetic disorders among the cross-border populations in the Thai-Burma borderland, including the Karen.

The sociocultural approach investigates human aspect of the disease transmission and response to treatment. Interviews with the Karen patients at the malaria research clinics in the borderland showed that people thought malaria was caused by the bite of infected mosquitoes; but occasionally patients also believed that they contracted malaria because they consumed contaminated food or exposed their bodies to the environment, and consequently their bodies lose equilibrium. Health practitioners often blame such traditional beliefs, health practices, and fear of side-effects on delay seeking care and can result in noncompliance (Baume et al. 2000; Nyamango 2002; Snow et al. 1992). However, studies show that biomedical interventions that ignore human social and cultural aspects may not effectively improve health problems. In addition to cultural beliefs, much community-based research tried to find factors that hinge upon people seeking access to care in a timely-manner, and they find that social factors have significant weight on people's decision making processes, such as: household economy, educational levels of parents, and the power relationship between patient and practitioner (Baume et al. 2000; Gessler et al. 1995; Hamid et al. 1995; McCombie 1995; Mwensi et al. 1995; Sachs, 2006; Tarino et al. 2000; Williams and Jones 2004). Interventions for malaria improved public health in Italy as a result of social and cultural change, outside of biological factors (Brown and Whitaker 1994).

The biocultural theoretical approach combines the biological and sociocultural approaches to comprehend both the human-nature co-interactions and cultural understandings of health and illness (Armelagos et al. 2005; Etkin et al. 1997; McEloy and Townsend 2004; Goodman 1998). Studying antimalarial medicine, Etkin (1992) claims that

side effects of pharmaceutical drugs are culturally constructed, and selections of pharmaceuticals are purposefully made to harmonize with medicinal plant use by the Hausa in northern Nigeria.

To analyze the health intervention praxis in the borderland, critical medical anthropology provides well-equipped theories. Discourses that facilitate interventions and rationales are produced by biomedical and epidemiological knowledge. Yet the political economic aspects that often impact human suffering are often ignored from the study of infectious disease. One of the motivations in this dissertation, is to analyze the biomedical interactions and practices at malaria research clinics and how biomedicine is used at the clinical sites.

Theoretical approaches of critical medical anthropology (CMA) provide critical views in investigating human experiences of health and illness that are impacted not only by the local political economy, but also by the structural inequality of resource distribution (Baer, Singer, and Susser 2003), social distortion by gender, ethnicity and citizenship (Briggs and Mantini-Briggs 2003; Hyde 2007), and medical pluralism that implicates the complex social relationship with state their use of biomedicine (Baer 2002). Anthropological studies in CMA also point out that the historical and structural aspects are ingrained in a local context, and they should be addressed to understand health disparity, everyday violence, and human suffering (Comaroff 1985; Crandon-Malamud 2004; Farmer 1991; Fassin 2012; Scheper-Hughes 1993; Wolf 2001).

The Thai-Burma borderland shares space with multi-ethnic groups. In such social and cultural dynamics, one's citizenship matters in regard to access to health care. Furthermore, the historical context of the borderland and the relationship with the Burmese government

created “off-limits” areas for conducting humanitarian interventions by international groups. The current conversation surrounding the causes of drug-resistant malaria in the Thai-Burma borderland is mainly due to migrants from Burma who bring *P.falciparum* into Thailand. Such discourses of epidemiology encourage biomedical research to further investigate and intervene in the people’s health risks.

In summary, biomedical aspects and epidemiology of malaria in the Thai-Burma borderland are influenced by various socioeconomic conditions, citizenship, ethnicity, as well as historical colonialism in Burma and contemporary border politics of the borderland. The emergence of drug resistant *P.falciparum* has close correlations not only with the natural environment but also the political economy of the peoples in the borderlands. I postulate that the borderland is a space where ideas and discourses are constructed. The Thai-Burma borderland is a case-study in which the effects of malaria could be seen through different lenses of natural science studies on malaria and public health. Utilizing a combined biocultural perspective and CMA, I investigate how global health has targeted malaria and their efforts to control the disease since the early twentieth century.

CHAPTER TWO ANTHROPOLOGY OF GLOBAL HEALTH AND HEALTH INTERVENTIONS IN SOUTHEAST ASIA

The second chapter discusses the social history of biomedicine and malaria interventions. I will trace the history of global health from the perspectives of colonial medicine, tropical medicine, and global health. The purpose of examining the social histories of biomedicine is to discuss how biomedical and epidemiological knowledge of malaria are constructed through the history of colonial expansionism, social recognition of race, ethnicity, and later, citizenship. I examine how these foundations impact the modern history of malaria intervention in Southeast Asia, particularly in the context of Thailand.

Although this dissertation focuses on the Thai-Burma borderland, because the malaria intervention programs in Thailand have more empirical data and historical accounts, I examine global health interventions for malaria from the Thai side in this chapter. Furthermore, Thailand has never been colonized by European nations; yet still, I analyze the modern history of malaria intervention in Thailand from the perspective of tropical medicine, which has been linked to colonial medicine.

1. The History of Two Medicines and Colonial Bodies in Asia

The history of tropical medicine is related to the history of European colonialism and its expansion. Tropical medicine has its origin in colonial medicine: colonial medicine was originally intended to protect the colonists' militaries from various infectious diseases in their new tropical territories (Greene et al. 2013:34). Later, medical intervention was expanded to include white administrators and civil servants (Arnold 2000:59). Colonial medicine turned a blind eye not only to native bodies which were suffering from endemic diseases, but also

local suffering bodies from newly introduced infectious diseases, which were brought by Europeans (Anderson 2006; Comaroff 1985).

Colonial medicine was based on hygiene practices that discriminated against the local populations based on race, ethnicity, gender, and class. It was invented to place the Anglo-Europeans at the top of hierarchy and the rest of the people as uncivilized and unclean people, who needed to be segregated from the white colonial administrators, officers, and white civil servants. Although their medicine was still imbued with racial discrimination, institutionalizing medical services helped the administration to stabilize their land-based establishment (Arnold 2000: 59). Colonial medicine is thus related to the expansionism of European countries, which needed to ensure the health and welfare of white officers in the tropical environment.

Western medical doctors and scientists had projected their racial concepts on to local populations. One of the examples of their “scientific” research was to determine the physical and cognitive superiority, intelligence, and morality based on one’s cranial capacity and other physical features. Drawing upon research on scaling cranial size of various individuals of race, sex, and origin, a Dutch physical anthropologist concluded that there was a correlation between racial differences and one’s intelligence capacity, which is now disregarded by most anthropologists (Figlio 1976). However, by using such scientific verification, colonial medicine and sciences in the nineteenth century rationalized the colonial views of the native body and superiority of the white race over other racial categories (Durbach 2009).

A major problem of colonial medicine was that it was established on the western cultural conception of “race,” which tactically marked physiological differences of natives from Europeans. For Europeans, a threat to their health was posed by dangerous native

populations. As such, colonial medicine was used to segregate “diseased” and “naturally disease loaded” local people from colonizers by imposed quarantines. Colonial medicine functioned as a powerful instrument to create the social concept of “race” based on their science. In the process, the colonists’ medical knowledge was used to distort local society, and recreate new social and political orders imposed on local people (Anderson 2008; Arnold 1993; Comaroff 1985). In such places, medical knowledge and practices changed social orders and local culture, irreversibly.

Medical knowledge became convenient tools to justify intervening in local people’s everyday lives and their hygienic behaviors (Anderson 2006: 45). The medical discourses created through these early modern institutions were linked to the “political expedients and economic imperatives of colonial rule and to the accumulation and classification of colonial knowledge” (Arnold, 1993: 23-24). Under the colonial administration, annual health reports of Europeans and the indigenous workforce served to monitor and measure “economic losses” (Street, 2015: 41).

Surveillance of local populations served two functions, to control bodies and to transform them into resources. Gazing at local people’s bodies and their health behaviors became the norm in colonial medicine, which became the base of biomedicine (Foucault 1979). In Africa, sick children became a target for intervention or avoidance. Europeans claimed that native children carried more parasites in their blood than European counterparts or African adults (Webb 2009:131).

A study conducted on children both in Africa and in the Dutch East Indies revealed that African children carried a higher level of gametocytes in their blood than children in the Dutch East Indies or adults in both areas, and this made the Dutch zoologist Nicholaas

Hendrik Swenllengrebel conclude that African children presented great danger to European settlers (ibid: 131). These western “scientific” notions, along with medical interventions, impacted the lives of local peoples as a “new cultural hegemony” in colonized societies (Arnold 1993: 4).

Colonial medicine was not always governed by “a purely enclavist mentality” in colonized territories (ibid:136). Due to the realization of imperial responsibility, colonizers’ missions shifted from protecting white bodies from contagious natives, to civilizing native populations by vaccination, teaching personal hygienic practices, and monitoring the local population’s health through surveys.

For instance, in 1802, the British administration introduced the smallpox vaccine in India, one of the most affected countries by the disease. It significantly contributed to the elimination of the disease, not only from India but also from the world population. However, the British administration’s aggressive health interventions which coincided with racial discrimination often met resistance from local Indian populations. Anderson also analyzes how colonial government’s health interventions for sanitization and modernization were perceived by Filipinos under the U.S. military occupation in the Philippines (Anderson 1995: 83-84)³⁰. The U.S. military medical doctors imposed vaccination and sanitation campaigns on local Filipinos. Anderson argues that, interestingly, the U.S. differentiated their public health interventions in the Philippines from other European colonizers, stressing their benevolence and brother-like aid was to “civilize” local Filipinos, not to exploit natives (ibid.). However, their views on the local population and their health practices were still imbued with the colonial paradigm, which was not so different from the nineteenth century

30 The U.S. military occupied the Philippines from 1898 until the Japanese invasion of the peninsula.

European enterprises. The high infant mortality in the Philippines was also translated into the idea of “not sanitary citizen yet” by the U.S. government, and it was deemed due to the “inappropriate moral attitudes and cultural in-competence” among the local Filipinos (McHelhinny 2005).

The colonial administration’s view of the local populations was prevalent in other Southeast Asian countries. During the early years of French colonization in Hanoi, Vietnam, in the late nineteenth and early twentieth century, cholera outbreaks revealed that the western cultural concept of race impacted French public health policies and daily experiences of the people in the country. The new science of urbanism and the French administrator’s racial views on the local people directly affected non-white local population’s access to water and sewerage systems, which often back-flowed during the rainy season. The local French administrators in Viet Nam conducted compulsory autopsies on cadavers to examine if the person carried deadly cholera or plague. If the bodies were afflicted, they notified the police agents to disinfect the home and disposed of the body to prevent spreading the disease, which upset families who wished to bury the remains. Because of racial segregation and forced public health policies such as these, local residents often responded to white colonizers with hostility and fear (Vann 2012).

These historical studies on medicine and health in Southeast Asia in the late nineteenth and early twentieth centuries reveal that the colonial governments viewed local Southeast Asian bodies infected with various tropical diseases due to their “uncivilized” life styles, lack of sanitation, and moral laxity. Several other studies of early health interventions by Western countries in Asia draw similar conclusions.

The establishment of tropical medicine as a scientific field in the late nineteenth century began with the arrival of germ theory. During this time, medicine underwent dramatic changes, which led to industrialized European countries discovering and improving diagnostic skills and accumulating scientific knowledge. Prior to this theory and the discovery of microorganisms, humoral theory was prevalent among European health practitioners. In Italy, malaria was thought to be caused by miasmas or “bad air” (mal-arias) from swamps, which caused sickness and death among populations in the southern part of Italy every summer.

Germ theory started replacing humoral theory after scientists started observing microorganisms under a microscope in the late nineteenth century. In 1880, a French military physician, Alphonse Laveran found protozoal parasites from malaria in a patient’s blood in Algeria. However, he could not find malaria parasites in marshes, water, and soil in his fields in Italy. In 1897, Ronald Ross, a British medical doctor, found that the mosquito was the vector of bird malaria. Additionally, Giovanni Battista Grassi found evidence of female mosquitoes carrying malaria parasites (Webb 2009). In 1897, Robert Koch, who was working in Dar es-Salaam in German East-Africa, succeeded in treating malaria by quinine. These discoveries of germs and new scientific technologies changed epidemiology and aided European imperials as they expanded their territories in other parts of the world by using biomedicine.

One of the remarkable shifts from colonial medicine to tropical medicine was that tropical medicine focused on evidence-based, empirical research, rather than social discourses and cultural concepts of race. John Snow’s investigation of the public water pumps of the neighborhood surrounding the Broad Street at the time of a cholera outbreak in

London in the mid nineteenth century was a great example of the evidence-based epidemiology in tropical medicine. Another shift in tropical medicine shows while colonial medicine focused on “primitive” local populations, tropical medicine focused on the microorganisms and non-human agents (ibid.: 41).

Globalization of tropical medicine has also been linked to the discourses of development and modernization of a nation-state by building health infrastructures. Considering that the tropical environment hosts pathogens, European administrators thought that their white bodies were too weak for the tropical heat and moisture, on top of exotic diseases. Therefore, tropical medicine was sought to protect their bodies, but not the native bodies which already inhabited the contagious environments (Anderson 2006).

Tropical medicine inherited some aspects of colonial medicine and it did not completely shift from the ‘colonial gaze’ of the older medical system. The German administrative turned New Guinea into a natural laboratory at the turn of the twentieth century (Street 2015). The German Administration trained local assistants and sent them to patrol villages where they treated minor health problems and reported outbreaks of epidemiology to administrators (ibid.: 44-45). Hospitals in remote Asian countries created spaces for monitoring and disciplining the population through the biomedical gaze. As such, institutions such as hospitals and jails played a significant role in displaying colonial power in occupied territories (Arnold 1993; Street 2015). Foucault claims that hospitals are spaces to generate these social norms of surveillance (Foucault 2003).

Statistics and surveillance not only became effective tools for measuring colonizers’ economic benefits but they were also deeply imbued with racial perceptions of tropical bodies, as we have seen in colonial medical practices (Arnold 1993; Livingstone 2002; Street

2015). Colonizers conducted detailed surveillance of the local health condition, mortality and morbidity, their diet, diseases by which they were affected, and treatment options which provided information about the physical conditions of the local peoples to the European colonizers (Arnold 1993; Comaroff 1985). Tropical terrains and its local populations became natural experimental laboratories and subjects of early public health projects.

The historical account of tropical medicine provides an important framework to discuss its legacies in the following field of international health. However, it should be stressed that biomedicine was not always a simple oppressive model in which a foreign power used it to control native bodies, health, and other social and cultural dominance. For instance, intellectuals from local societies started seeing the deteriorated and exploited conditions of their countries; thus, leaders who had opportunities to travel to foreign countries learned about Western ideologies that were embedded within modern medicine. Here, we see histories in which Western knowledge and technologies were not simply imported by outsiders, but reinforced from inside by local peoples, who saw its impacts and advantages in attaining Western scientific knowledge.

Thailand, which has never been officially colonized by any foreign nations, adapted for western modernity, especially in science fields. The Thai King Mongkut, who is also known as the “Father of Thai Science” by Thai people, eagerly adopted modern scientific knowledge and technologies by himself, and sent royal family members to western countries to have them learn various scientific fields, then appointed them to the country’s important positions upon their return to the kingdom in the mid nineteenth century. His son, King Chulalongkorn, further advanced medical science in Thailand, and founded the first modern hospital in Thailand. It was during the reigns of King Mongkut (1851-1868) and King

Chulalongkorn (1868-1910) that Thai modern science flourished. Around the same time, the colonial encounter with European countries had reached its greatest intensity in Siam (Muksong and Chuengsatiansup 2012: 228).

As this history indicates, it was not always outside foreign countries that enforced the expansionism and use of modern medical technologies to control the local population's health; local central figures often played a central role in adopting biomedical knowledge and technologies to exercise power over the territories and its peoples. Arnold (1993) also claims that during the colonization of India, the adoption of biomedicine was not a subjugation of the local people by the colonial power. The local administrative voluntarily used biomedicine as it was entrenched the colonial order in broader aspects of the local political, economic, and cultural systems.

With this historical background, I will review the history of international public health and the emergence of global health in the next section. I discuss how the two fields were different from the two predecessors. The emergence of international public health waited until the end of the Second World War, when the post-colonial countries achieved independence and came to be a part of the United Nations, and thus became responsible for their own peoples' health status. As we have seen in the modernization process of some nation-states in Southeast Asia, modernization and development were inseparable from the nation-states' adoption of western science and technology. This pattern was repeated in post-colonial countries after the war and showed a more complex paradigm in the gap between idealism and practicality in international health.

2. The Emergence of Global Health and Malaria Interventions

The history of malaria interventions by international health and global health have been well examined by other scholars in history and public health fields (Packard 2007; Snowden 2006; Stephan 2011). Malaria has been one of the targeted infectious diseases designated for eradication by the international health players, such as the World Health Organization (WHO), and the United States Agency for International Development (USAID) (Cueto 2013; Greene et al. 2013). Because of this, it would make sense to examine how the past malaria control programs failed and understanding the current players' approach to the disease by tracing the history of global health and its operational aspects.

Prior to the WHO initiatives, there have been individual country's organized efforts to control malaria. For instance, President Franklin D. Roosevelt of the United States of America signed a bill to create the Tennessee Valley Authority (TVA) for a hydroelectric power project, which also included a malaria control plan in a malaria endemic region along the Tennessee River. The successes of the U.S. government in opening the Panama Canal Zone, and the engineering projects of hydropower production in the South by the Tennessee Valley Authority (TVA) were considered successful cases of engineering the natural environment to be 'malaria-free' environments by use of technology.

During World War II, the American government launched malaria control programs around U.S. military bases in war areas. Aside from the individual government's efforts, the Rockefeller Foundation launched health and sanitation projects in some parts of the world. The Rockefeller Foundation's strategy focused on the mosquito vector and not humans and drugs, which was in contrast to the intervention approach taken by European countries.³¹ The

³¹ European countries, such as Italy, targeted controlling the malaria parasites and treating the sick by anti-malarial drugs (Stepan 2011).

U.S. approach also included environmental engineering and changing the mosquito habitat by undertaking wetland drainage and spraying larvicidal sprays under the militaristic campaign (Stephan 2011; Khiun 2012).

The end of World War II brought independence to many previously colonized countries. When the United Nations (UN) was established in 1945 as a response to the devastating war consequences, the UN participating countries called for the necessity of establishing an international public health body to achieve the humanitarian interventions for health and welfare of the world population (Greene et al. 2013). Three years later, in 1948, the World Health Organization was established. The emergence of international public health started under this circumstance, of which the impetus to save the impoverished populations in the world was the highest priority.

The global health interventions for malaria were also related to the political divide in the world during and after World War II. The Allied Control Commission used the first large-scale use of DDT against malaria in a campaign in Italy, and the successful vector control case was imitated by the United States for their disease eradication campaigns as propaganda during the Cold War (Stepan, 2011: 119). This technoscientific approach, such as using quinine, chloroquine, DDT spray, ditch clearing, and building health station infrastructure dominated the malaria control programs in the pre-war and during the war period. During the Eighth World Health Assembly, the WHO's Expert Committee on Malaria endorsed worldwide malaria eradication in 1956.

The discoveries of chloroquine and DDT³² (dichloro-diphenyl-trichloroethane) set the

³² Dichloro-diphenyl-trichloroethane (DDT) was discovered in Switzerland in 1939. Chemicals for combating malaria and mosquitoes were developed through the necessity of military purposes during wartime (Stepan 2011).

WHO aims of control high. The ambition of the WHO was supported by the idea that both the vector control of *Anopheles* mosquito population using the DDT, and *Plasmodium* parasites control, could eradicate the disease. The WHO launched its Malaria Eradication Programme (MEP) in 1955. Greene et al. suggests that the technological tools were so effective at first that international public health did not doubt the power of science and technology (Greene et al. 2013). It was considered that the MEP would usher in economic growth and create overseas markets for United States manufactured goods (Brown et al. 2006).

At the WHO malaria meeting, an anecdotal slogan of “War Against Malaria”³³ was used to eliminate malaria parasites and its vector mosquito. As it shows in the slogan, the intervention approach for malaria in the 1950s and 1960s heavily relied on the biomedical and technological ‘weapons’ by using quinine and DDT as interventions. As a consequence, WHO malaria control from the 1950s through 1960s showed a certain degree of success in some low to endemic countries, such as Sri Lanka, India, Italy, Georgia, Thailand, Brazil, and some other Caribbean and Latin American countries. A report suggests that an estimated US \$1.4 billion was spent on malaria eradication programs between 1957 and 1967 (Stepan 2011: 165). Even though the world had spent so much monetary resources in the WHO-led malaria control programs, local people’s needs were often ignored in such vertical disease control, which primarily relied on the technological interventions, not the improvement of health infrastructure.

33 Medical anthropologists claim that health interventions and its images are often influenced by cultural metaphors of the social reality. Emily Martin (1994)’s study on disease metaphors analyzes how analogies are historically constructed and impact the ways in which people project their social relations onto science and technology.

Moreover, the top-down, technology-oriented malaria approach did not include local participation. The technologies were brought in from outside, and local populations were excluded in planning. Also, in many poor, remote regions in developing countries, spraying teams often met obstacles. The regions that share international borders with poor neighbor countries, and regions that did not have effective leaderships in malaria eradication controls, saw that DDT spraying was almost useless (Greene et al. 2013). Here, I point out that because malaria is a borderless disease in its nature, it is not difficult to imagine that such top-down and heavily technology-centered approaches would have left the resource-poor countries behind, and consequently, the problem persisted both in the resource-poor and resource-rich neighbors.

The DDT spray was not intended to be used in most of Africa. Cueto points out that the MEP excluded tropical Africa, as the place was considered too large and still ‘premature’ in technological interventions (Cueto 2013). This public health view itself shows the justification of the public health failure, and preventive attitude of the WHO toward possible criticisms against their effort by attributing their failure to the people’s poor governance.

By the mid-1960s, there were emergence of both resistance to antimalarial drugs by plasmodia and pesticide-resistant mosquitoes.³⁴ When the WHO abandoned the MEP in 1969, it was acknowledged that strengthening health infrastructure was important to control malaria (Brown et al. 2006; Cueto 2013). However, the idea of improving social, economic circumstances was not linked to a decrease in malaria mortality and morbidity among health policy makers, because these large-scale programs were considered difficult to be executed

³⁴ Historian Packard posits that population movement, war, agricultural revolutions, breakdown of sanitation, and construction of roads and railways impacted the increasing malaria epidemics more than anopheles mosquitoes’ adaptation to the environmental changes during the period (Packard, 2007).

by the majority of economically disadvantaged developing countries, and due to the unclear goals for policy makers.

In the 1970s and the 1980s, the WHO's attention shifted to a "primary health care" approach that included training of local health workers. The Alma Ata Declaration in 1979 aimed to achieve "health for all by the year 2000" by emphasizing prevention and delivery of basic health services by use of appropriate technology (Basilico et al. 2013). However, this idealist philosophy in the Alma Ata Declaration was rejected by some wealthy countries including the United States. In the same year, policy makers of some rich countries and the Rockefeller Foundation congregated in Italy to announce the "Selective Primary Health Care" approach (ibid.: 82). The selective primary health care approach takes cost-effectiveness under consideration, meaning focusing on low-cost and high-return in health interventions.

In the 1980s and 1990s, the WHO was in crisis due to a lack of strong leadership, poor management and corruption (ibid.). Because of a lack of resources and the lack of a "magic bullet" by antimalarial drugs for drug-resistant malaria, the malaria control programs by the WHO did not see success during this period. Meanwhile, more international organizations emerged as influential players.

Since the 1970s, the World Bank invested in population control, health, and education. In the 1980s, the World Bank became a powerful global health organization, along with UNICEF and the International Monetary Fund (IMF) (Brown et al. 2006). The World Bank began to make direct loans for health services, introducing free market economy into global health by calling for more efficient use of resources. Wealthier countries preferred the neoliberal approach taken by the World Bank and the IMF, thus the monetary pools for the

WHO did not increase. During the 1980s and 1990s, the WHO did not make major changes in global malaria prevalence. When international societies put less effort in pooling their donations into malaria programs in the 1980s and 1990s, not only the number of malaria endemic countries increased worldwide, but they also saw the emergence of drug-resistant malaria. A large scale epidemiological study shows that the malaria mortality increased from 995,000 in 1980 to a peak of 1,817,000 in 2004 (Murray et al. 2012). During this period, the ‘super malaria’ of chloroquine-resistant and artemisinin-resistant *Plasmodium falciparum* appeared in the Greater Mekong sub-Region (GMS) in the borderlands of Southeast Asia (WHO 2017).

Neoliberalism in global health started around this time. The World Bank and IMF took the Structural Adjustment Programs (SAPs) in issuing loans to developing countries. For many developing countries, the loans from the World Bank and IMF created economic crises and collapse in health systems (Kamat 2007; Lockhart 2008; Pfeiffer 2013). SAPs initiated decreases in the number of civil servants in public health and significant decreases their real wages. NGO workers were paid 23% to 46% more than the government employees in the Ministry of Public Health in Mozambique (McCoy et al. 2009). The health interventions led by the World Bank and IMF were targeted on the private-sectors, instead of on the local governments. Thus, the resource-poor sub-Saharan countries had staff-deficiencies due to a brain drain. Together with UNICEF, they also delivered disease-specific approaches which relied on technical fixes, such as immunizations of targeted childhood diseases in developing countries (Basilico et al. 2013).

In the 1990s, the WHO regained its leadership in global health again under the newly elected Director-General of WHO. Brundtland announced the new term of global health in

order to emphasize the new paradigm shift in operating health governance and its multilateral partnerships in global health. Brundtland took a macroeconomic approach and increased “public-private partnerships” (PPPs) (Ecks and Harper 2013). Examples of disease-specific programs that are related to malaria programs are: the Global Fund to Fight AIDS, Tuberculosis, and Malaria (GFATM), the Global Alliance for Vaccine and Immunizations (GAVI), and the Roll Back Malaria (RBM) partnerships.

The Roll Back Malaria (RBM) partnerships pronounced malaria as one of the major infectious diseases that needed to be on the global health agenda, and it encouraged wealthier countries to donate more money to malaria control programs. As a consequence, the RBM could spend US \$67 million for the first five years from 1997 to 2001, which doubled to \$130 million in 2002 (Cueto, 2013). The RBM placed its focus on prevention, including the distribution of insecticide-treated bednets (ITNs), rapid diagnostic tests, safe use of insecticides, and promoted research on antimalarial drugs and vaccine.

Today global health intervention programs for malaria see various actors in operation, such as: international organizations, state governments, biomedical and biological researchers, individual personal consultants, NGOs, philanthropic organizations, pharmaceutical companies, and academic institutions. Researchers agree that the public-private partnerships (PPPs) brought a new paradigm into the previous narrowly-structured, vertical, technology-centered malaria control initiatives. Because of the neoliberal global health approach, local governments need to collaborate with multilateral partners, and create surveillance data that are also shared with other foreign countries.

These various research institutions, philanthropists, and pharmaceutical companies cooperate to provide health access to underrepresented populations in malaria endemic

countries, which is giving hope to public health practitioners in these locations. For instance, health access among migrant populations and refugees along the Thai-Burma border became seen not as just a local health issue, but a global health concern due to the multiplicity of the disease burden. In other words, the concept of “right to health” came into play in directing global health toward new types of multinational and multilateral partnerships among the different interest groups to intervene in local health issues related to a particular infectious disease.

After sixty decades from the first malaria eradication program, global health interventions on malaria have seen a significant improvement in the last two decades. Moreover, between 2000 and 2015, the malaria incidence decreased by 37% globally and deaths from malaria dropped by 58% among all age groups. These statistics indicate that 6.2 million people’s lives were saved from malaria due to health interventions (WHO 2015 a). In the last few decades, malaria funding increased nearly ten-fold (the Bill and Melinda Gates Foundation webpage 2017). The investment of US \$2.7 billion in 2016, however, is still considered a far cry from achieving the new goal of the WHO for malaria elimination.³⁵ However, because of the last two decades’ success in malaria interventions, the WHO and other collaborators asserted that funding for malaria worldwide has seem to reach a plateau in 2010.

The Bill and Melinda Gates Foundation has been the most influential partner for the United Nations since 2013. The Foundation clearly spelled out their goal of achieving eradication of malaria at the assembly meeting in Seattle, calling for commitment among global health organizations, including the World Bank, Global Fund to Fight AIDS,

³⁵ A Letter to Partners from Dr. Alonso in the WHO website in 2017.

Tuberculosis, and Malaria, and the U.S. government, to bring in more resources to accelerate interventions. This is an example of a successful public-private partnership and multilateral global health collaboration. The Gates Foundation took the initiative to develop vaccines, medicines, and improve mosquito control methods. Being a strong advocate in the power of science and technology, Bill Gates announced that his and his wife's foundation launched the Accelerate to Zero program to eradicate the disease in Seattle in 2007 (Das and Horton 2010; Kamat 2013). Due to The Gates Foundation's financial contributions and interventions for malaria, the WHO and many public-private partnerships (PPPs) now believe in the efficacy of new and old methods of malaria eradication. The Gates Foundation and other organizations involved in PPPs provide drugs, lab equipment, and impregnated bed-nets to resource-poor countries, researching into a malaria vaccine, new anti-malarial drugs, improving diagnostics, insecticide, and other technological methods (Kamat 2013).

Global health partnerships in malaria control increased funding and awareness of malaria as a global health burden has increased. Today global health practitioners and policymakers endorse clinical trials alongside treating underserved populations due to the success of these neoliberal endeavors. Furthermore, the multilateral actors and liberalized healthcare delivery from multiple directions create more complex situations for health interventions.

Can the elimination of malaria be achieved now, considering that it is one of the oldest infectious diseases in the history of humankind? Some malaria experts are skeptical.³⁶

³⁶ They claim that it is still challenging to provide insecticide bed-nets, rapid diagnostic testing kits, and effective combination drugs especially in some remote areas and hard-to-reach populations such as refugees and migrants in ethnic conflict zones in the borderlands. In addition, such technology-centered and biomedical-focused strategies for the population are questioned for its feasibility and ethics by social scientists and historians (Kamat 2013; Packard 2007).

Medical anthropologists criticize global health operations, saying that they often concentrate on technological interventions for parasites and insects but do not take into consideration local historical, political, economic, and cultural contexts when implementing these interventions. Various critiques also challenge the visibility, ethics, and relevance of health interventions that are mostly led by international expats and international doctors.

3. The History of Malaria Control in Thailand and Global Health Partnerships

Before malaria interventions, Thailand, like many other Southeast Asian countries, had long been a malaria endemic country with tropical forests and populations that engage in agricultural activities near the forested environment. In 1943 during World War II, the “Malaria Division” was established under the Ministry of Public Health (MOPH). At MOPH, malaria units³⁷ were established in 1945 throughout the country districts as a response to severe epidemics in the country (WHO 2011). This shows that among many other vector-borne infectious diseases, such as yellow fever, dengue fever, and Japanese encephalitis, malaria required special attention from Thailand MOPH. In 1949, malaria was still the leading cause of mortality with over 38,000 deaths, which translates to a rate of 201.5 per 100,000 population annually in the country (Ministry of Public Health 2003: 1). The Thai government assisted by the WHO-UNICEF Malaria Control Demonstration Project launched drug-distribution and vector-control programs. This included using DDT residual spray in a northern province. In 1951, the United States government assisted the Thailand MOPH both technically and financially to develop a country-wide Malaria Control Programme³⁸. This

37 The malaria Units in every malaria-burdened Districts still function currently, and they provide malaria parasite detection, anti-malarial drugs, and insecticide impregnated nets (IINs) to the residents. They also have community volunteer workers to mark households that did not treat their stillwater containers (observations at Wang Pa village in Thailand).

38 The National Malaria Control Programme was financially and technically supported by the United States Agency for International Development (USAID) funded by the United States government. The malaria control program focused on indoor insecticide residual DDT

was followed by the WHO's announcement of the Malaria Eradication Program (MEP) in 1956. Thailand also officially started the National Malaria Eradication Project³⁹ that lasted until 1972. Due to aggressive active case detection methods and the distribution of materials for prevention and treatment, Thailand was on track to become a malaria-free country. In 1963, the malaria mortality rate in Thailand was reduced to 22.8 per 100,000 population and this trend lasted until the end of 1960s. From 1965 to 1967, malaria mortality decreased to 15.2/ 100,000, and it further decreased to 10.4/ 100,000 population in 1969 (WHO 2011: 9).

Thailand's malaria control programs were vertically structured, but it also stressed village-based health interventions using health volunteers. Thailand MOPH provided health coverage, blood screening, low cost medications conducted by health volunteers from villages, and vector control. Village health volunteers took initiatives to clear mosquito habitats, marking households that did not eliminate mosquito habitats in their house compound, and encouraging local villagers to take malaria tests at a malaria post if they showed febrile symptoms. Community volunteers were rewarded for their service based on the number of blood slides they made, not on detecting malaria cases. Through these intensive village-based health interventions programs, most of the provinces in Thailand had achieved the WHO malaria elimination goal by the 1980s. Subsequently, malaria cases in Thailand had decreased steadily from the late 1980s until the 1990s (WHO 2011).⁴⁰

However, the next two decades saw an end to this decreasing trend of malaria in Thailand due to several factors. First, the national budget for malaria control has decreased

spraying and distribution of chloroquine.

39 The National Malaria Eradication Project supported by WHO and USAID aimed at covering 84% of the country's population leading this segment to be malaria-free.

40 Malaria cases in Thailand during the period remained in the range of 270,000 to 340,000 (WHO 2011).

dramatically since 1997.⁴¹ In many Asian countries, economic concerns encouraged governments to decentralize their operations. In Thailand, “Plans and Process for Decentralization to Local Administrative Organizations Act of 1999” called on the country’s ministries including MOPH to decentralize their operations and the budget for malaria control became heavily reliant on resources from international organizations such as the Global Fund for HIV/AIDS, TB and Malaria (GFATM)⁴². Second, after twenty years of financial and technical assistance, USAID terminated assistance in Thailand. Third, chloroquine-resistant malaria emerged in some border regions, between the Thai-Cambodia and the Thai-Burma borderlands by the end of 1970s (WHO 2011).

President George W. Bush launched the U.S. President’s Malaria Initiative (PMI) in June 2005 and the successor President Barack Obama expanded the program as a continuation of the Bush Administration’s Global Health Initiative (GHI) to scale up malaria prevention and treatment interventions in order to reduce malaria mortality. The PMI has supported malaria control efforts in the GMS since 2000 and the governmental initiative has made more drastic changes in its interventions, by conducting surveillance for drug resistance and drug quality monitoring cross-border areas, which were political conflict zones and off-limit areas for civilians until recently.

These new PPPs are relatively flexible in terms of operating prevention and treatment interventions, distributing biomedical products, and conducting research. However, as more studies came out from social sciences disciplines, scholars criticized PPP arguing that their approaches are based on neoliberal ideas of market-oriented economics. Furthermore, PPP

41 The national budget for malaria control in Thailand from 2006 through 2010 was reduced from US\$12 million in 2006 to less than US \$1 million in 2010. Approximately sixty to seventy percent of this budget goes to the salaries of the staff (WHO 2011).

42 Founded in 2002.

goals often ignore the people's actual needs in everyday life. In Southeast Asia, chloroquine-resistant malaria was first found in the late 1950s. The drug-resistant malaria gradually spread to Latin America, India, Oceania, and Africa. Since then, the emergence of drug-resistant malaria has always imposed a major challenge to global health sectors.

The new global health call has also impacted the local government's disease control programs. Following this discussion, I describe the malaria control initiative's focus on the Greater Mekong Subregion (GMS) in Southeast Asia. I also discuss how the problem of multi-drug resistance came to play an important role in increasing global health attentions on the region, and then created new multilateral cooperation with international organizations and private sectors.

Under the UN-led global health interventions, malaria campaigns can be seen in conjunction with the development of economically disadvantaged countries. Taking the Shoklo Malaria Research Unit (SMRU) as an example, I explore how their malaria interventions at the clinics are operated by multilateral collaborations among global health players, including the Wellcome Trust, the European Union, the Bill and Melinda Gates Foundation, academic institutions, and pharmaceutical companies.

Along with NGOs and the UN, the Thai government provides basic needs, such as food, basic education, and health care, to the migrant and refugee populations who live in refugee camps and border sites. Yet, the main purpose of providing healthcare to uninsured migrants is to prevent epidemics of infectious diseases and protect the Thai population from carriers. The Director of the Bureau of Vector-Borne Diseases at the Thai MOPH straightforwardly indicated the discriminatory views that the Thai public health offices have towards non-Thai people: "Migrants bring various diseases into Thailand, and if we don't

treat them, they will spread diseases to Thai people. We don't want to encourage more of them [migrants] to come to Thailand" (Dr. Wichai, at MOPH on October 2013).

Due to the pressure from global health societies to the Thai government and its neighbor countries, containment of drug-resistant malaria became an urgent item on the global health agenda. Multilateral collaborations in malaria research and health interventions along the Thai border regions, where political and economic factors coincided with epidemiological urgency, successfully increased awareness within the global health societies. Many multilateral partnerships, such as GFATM, Malaria Venture, Bill and Melinda Gates Foundation, and WHO were launched and invested several billions of dollars into the Greater Mekong Sub-region (GMS).

Thai malaria control programs, supported by global health organizations and partnerships with foreign governments, succeeded in decreasing incidence rate significantly from 192,000 cases in 1998 to 51,000 cases in 2004 (Thailand MOPH, 2012). Although malaria has become almost a past disease in most cities in Thailand, it is still one of the major health problems that causes both mortality of small children under five years of age and failure in pregnancy especially among populations living along the Thai-Burma border and the Thai-Cambodia border (Luxemberger, et al. 2001; WHO 2006). Numerous reports in epidemiological studies of malaria alert us to the re-emergence of the severe malaria parasite, *P. falciparum* in Thailand since the 1970s after a successful decrease a few decades ago. Along with the re-emergence of *P. falciparum*, epidemiologists warn that there is an emergence of multi-drug resistant parasites in border areas (Luxemberger et al. 1996). Among other areas in Thailand, the Tak Province in northwestern Thailand, which shares a border with Burma, has the highest malaria incidence rate (5.68 cases per 100 population)

compared with the national average (Zhou, et al. 2005). Thus, the Thai government saw border-crossing populations as threats to their public health efforts.

4. Conclusion

Chapter Two has examined the social history of global health and its interventions for malaria from the early nineteenth century to the early twenty-first century. Given a connection between colonial medicine and tropical medicine, I further explored how colonial administrations viewed ‘exotic’ illnesses and afflicted bodies of the local natives in many parts of the tropical environment in Asia and Africa. The colonial notions of the local body as disease agents, and racial hygienic perceptions were associated with imperialism and expansionism of colonial medicine. The colonial gaze on sick bodies was imbued with the European-centered cultural concepts of race, ethnicity, class, and gender. The shift from the racial and moral blame on the exotic natives in the tropics to the germ theory between the late nineteenth century and early twentieth century was a hallmark in international public health history. When science advancement found germs as the disease agents, such cultural explanations and environmental determinism were replaced by the microorganism theory and laboratory work. As such, tropical medicine played a role in associating various infectious diseases to the ‘tropics’ environment and sick natives came to be viewed as victims of the disease agents, not causing their illness due to poor morals.

However, the germ theory of tropical medicine lacked explanations of social, and political economic factors that were often ignored as a cause of the local people’s suffering. Even after the dawn of tropical medicine, the colonial legacy in health interventions by the Western countries and organizations had long impacted the ways in which the local populations experienced international health interventions and accessed care. One such

example is that international health interventions often took an aggressive technology-centered approach, and often ignored the local people's social needs and the cultural complexity that existed in the local context. In sum, although the advancement of science and technology, especially in medical fields, significantly contributed to reduce mortality and morbidity of some deadly infectious diseases, tropical medicine was able to provide its technologies by engineering 'the tropics' as a natural laboratory and its peoples as their research subjects.

The history of nearly two centuries of malaria efforts have strong connections with the history of the World Health Organization (WHO) and global health development. At the turning of the twentieth century, there was virtually no collaboration across nations although governments and some organizations in wealthy countries had launched malaria and other infectious disease control initiatives. The establishment of the WHO as the international public health organization after the Second World War brought hope in international societies for the eradication of some infectious diseases, such as malaria and smallpox, by engineering modern medical science and technologies. The WHO's malaria program goals shifted from eradication to control, then elimination.

From the 1950s through the 60s, malaria interventions were closely related to the advancement in science and technology in the environment of international cold-war politics and competition in science advancement among them. Thus, chloroquine and DDT spray were often used for political purposes to gain political alliances. The lack of leadership by the WHO and the lack of funding contributed to the increase of malaria burden in developing countries in the 1970s and 1980s. The structural adjustment programs (SAPS) brought neoliberal and market-oriented health interventions, including infectious disease control

programs, and many poor countries, especially sub-Saharan countries, had to cut their public health budgets.

Although it is still too early to say, the WHO and many of its partners agree that the global health malaria control efforts might have reached their peak at the beginning of twenty-first century, and now is the best time in terms of funding resources, diversity in partnerships, and strong leadership and commitment by the global health players. The expectation for the elimination of the disease from the world's populations have been ushered in by the strong belief in science and technology in the biomedical field. The scale-up programs by international governments, also created more job opportunities to the local populations in health sectors at the public and private sectors.

However, what is lacking in this glamorously painted global health discourse of the history of malaria control and on the current successful achievement in reducing mortality and morbidity, is that there are not many critical investigations of the local peoples' experiences of such global health interventions at the local clinical settings, and how these interventions have impacted their understandings of the disease, biomedical interventions, within other social, cultural, and political economic contexts. Because illness is experienced by people within a local context, investigation of such aspects will add a more critical, human-centered approach to global health.

CHAPTER THREE THE KAREN IN THE THAI-BURMA BORDERLAND

This chapter has two objectives. First is to discuss the social history of the Karen in Burma, and the Thai-Burma borderland as a space of humanitarian interventions as well as a space of disease surveillance. Second is to provide a social history of the Karen in the Thai-Burma borderland, who have not been studied sufficiently in anthropological studies. By discussing these two aspects, I analyze how state power and humanitarianism emerge in the borderland, and at the same time, how local and international influences situate undocumented Karen migrants in the contested Thai-Burma borderland. My analysis in this chapter presents the cultural politics of ethnicity, citizenship, and epidemics of the borderland in four sections.

First, I present an ethnographic sketch of a border town, Mae Sot, which is called “Little Burma” in northwestern Thailand. I present the border town because the border town has long been accommodating various ethnic groups both from Thailand and Burma beyond its national boundary. In the Tak Province where Mae Sot is located, ethnic minority peoples made up about eleven percent of the population of the province according to a survey data from the late 1960s, and among those the majority of the ethnic minority was the Karen (Kunstadter 1983:18).⁴³ In recent years, the town has come to be known as a crossroads of humanitarian aid projects for migrant populations as well as surveillance sites for malaria epidemics, due to migrant populations and the emergence of multidrug resistant malaria. I claim that Mae Sot shows an example of contested border politics in the Thai-Burma borderland. Mae Sot and the Thai-Burma borderland not only receives attention from

⁴³ Aside from the Karen, there are Hmong, Shan, Kayah, Kachin, Akah, Lahu, Lisu, and Lua.

humanitarian perspectives, but also epidemiological interests and cultural politics of the citizenship and ethnicity.

Second, I briefly examine ethnographic accounts of the Karen people. I review previous ethnographies of the Karen both in Thailand and Burma in order to stress that there are different political and cultural representations of the Karen ethnic group of peoples in both countries. Previous studies of the Karen often tend to discuss either within the context of Thailand or Burma, and address that these differences stem from the cultural politics of the nation-state and their social relations with nation-states they reside. My research does not ignore these previous studies of the Karen, and agrees that understandings of the social and political situations of the Karen in the borderlands needs careful investigations of the historical accounts of the Karen in both countries.

Third, I examine the social history of the Karen to elucidate their long-term suffering from ethnic conflict in Burma, and how the historical relationships between the Karen and western missionaries, the British, and Burmese governments is connected to this current ethnography of the people in the borderland. The social history of the Karen in Burma is important to understand why the Karen endure inequality in health access and violence in their everyday life. The political economic conditions of the Karen provide insights into an understanding of the global health humanitarian effort to reach out to internationally displaced populations (IDPs), including undocumented migrants and refugees in the borderland, and malaria burden in the locales.

Fourth, I conclude this chapter with my analysis of the Karen as undocumented migrants in the humanitarian aid, and the global health attention to their social and biological space, as it coincides with one of the epicenters of multidrug resistance, which I described

more in detail in Chapter One and Two. I analyze the discourses of undocumented migrants among the Thai people and epidemiologists who work in the borderland. I argue that health access among the Karen in the borderland is inflicted, despite the humanitarian aid activities along the border.

1. The “Little Burma” in Northwestern Thailand

Located in northwestern Thailand, Mae Sot is located approximately 600 kilometers away from Bangkok, and it is accessible both by land and air routes. The majority of local people use the land route, taking the long-distance bus from either Bangkok or Chiang Mai to Mae Sot. Both bus routes must pass winding mountain roads with many hairpin curves. The bus trip from and to Mae Sot is notorious to locals for its risks and security checkpoints outside Mae Sot. Nevertheless, Mae Sot attracts international visitors who come to engage in various humanitarian activities and organizational projects.

Foreign visitors and local Thai people call Mae Sot “Little Burma” because of a large migrant population from Burma and accelerated economic exchanges within the borderland. Mae Sot does not resemble any other place in Thailand because of the presence of international volunteers everywhere in the town and vehicles running through towns with international organization logos.⁴⁴ Because of migrants, Mae Sot attracts foreigners, who work at various international organization offices, refugee camps, research clinics and local NGOs in education and health sectors, research institutions, religious groups, and the UN organizations. These humanitarian aid groups and organizations support Internally Displaced Peoples (IDPs), including the Karen from Burma. Those volunteer workers, professionals,

⁴⁴ Examples of such international organization are the IOM (International Organization for Migration) and the United Nations High Commissioner for Refugees (UNHCR).

and students often wear either office attire, shirts with organization logos, or ethnic attire of their supported groups. Thus, it is relatively easy to distinguish their purposes from tourists. In Mae Sot town, pickup trucks with the UNHCR logo bring refugees from refugee camps to a private hospital in Mae Sot for medical check-ups to approve their medical clearance requirement for their visa to a third country other than Thailand and Burma. As such, as a border town, Mae Sot provides a space where humanitarian aid both from international and local groups coexists with regulations of border politics by the Thai government. The porous national border between Thailand and Burma has created a contested cultural and epidemiological zone.



Figure 3.1. Checkpoint at Friendship Bridge.

The center of Mae Sot town is only ten kilometers away from one of the official Thai-Burma border customs, which is called “Friendship Bridge.” Friendship Bridge crosses over the Moei River running between Thailand and Burma, and one can see border towns from both sides from the river banks. The temporary migrants cross the border on a daily basis to

sell products at market, work at sweatshop factories in the Mae Sot vicinity, to attend migrant schools in Mae Sot, or some to seek health treatment at Mae Tao Clinic, which is also located on the highway that extends from the Friendship Bridge to Mae Sot and beyond. When I stayed in Mae Sot in December 2009, and again between March 2011 and April 2013, the Friendship Bridge customs office was temporarily closed due to the political insurgency in Burma. However, I saw many undocumented migrants cross the river on wooden boats everyday right under the eyes of the custom officers, and pickup trucks, waiting for passengers.

At the central economic district in Mae Sot town, various imported products were sold at shops and at the markets. Gemstones, wooden products, Burmese salons, tanakaa face powder⁴⁵, soaps, tropical fruits, fresh fishes, live animals, handmade ethnic crafts were some of the items sold by Burmese and ethnic minority peoples at the market. Besides Thai and Burmese people, there were various ethnic minorities, such as Karen, Karenni, Hmong, Shan, and Muslim migrants⁴⁶ from Burma.

Compared to the Burmese who were engaged in factory work, Karen undocumented migrants were often hired by individual employers in Thailand, and they are less likely targeted by Thais that they were getting job opportunities away from Thais. In fact, regardless of their birthplace in Thailand or in Burma, ethnic Karen people often receive sympathy from local Thai people. A female senior Thai school teacher who was in her mid-fifties in Mae Sot said to me:

There are both Karen and Burmese migrants' children in the Thai public elementary school. I sympathize with the Karen people because they were poor and oppressed by

45 Burmese people grind tanakaa tree barks and make concocted whitish liquid and apply it to the face to protect the skin from sunburn.

46 The Muslim population in Mae Sot has been well established in Mae Sot. The Muslim community has its own mosque, an elementary school, pharmacy, markets for halal food, funeral services.

the Burmese government in their country. Now they are stateless, because of the ethnic conflict in Burma, for they cannot go back to their country. We have a lot of Karen refugees in the refugee camps and these children who were born in refugee camps cannot go anywhere nor become Thai citizens. I am particularly worried that in the future, if these Karen children hear stories of their suffering from their parents, they might come to hate their Burmese friends.⁴⁷

A typical response to the Karen IDPs among the Thai is characterized by a positive attitude to the humanitarian support for the people. For instance, Thai citizens in the border provinces showed in survey research that children of IDPs should receive education in the Thai language and the education should be accredited by the Thai government. However, when it comes to settlement, the majority of Thai respondents did not support granting permanent settlements to IDPs and children, who were born in Thailand (Institute for Population and Social Research, Mahidol University 2012).

Karen people have been living in Mae Sot and its vicinities for many years. However, due to heightened political insecurity in the borderland, the Thai government placed Border Patrol Police (BPP) to check the in/outflow of people at numerous checkpoints along the Thai-Burma border. Thus, ethnic minorities, undocumented migrants, and refugees now need to deal with various border authorities, including the Thai Border Patrol Police (BPP), *tamadaw* (Burmese army), and Karen soldiers for their everyday survival. Nevertheless, border politics also allow an exception for undocumented migrants who need health care access in Thailand. As I have discussed in Chapter One and Two, the Thai-Burma borderland is also known as space where MDR malaria parasites take a toll on the people. The existence of the undocumented populations whose lives are at risk of MDR malaria become an impetus for the global health experts to turn their eyes on the Karen people and

⁴⁷ Interview with a Thai elementary school teacher in Mae Sot, September 2012).

other cross-border populations in the borderland.

At the same time, various health facilities for migrants, which are run by grassroots NGOs and international medical research groups, have mushroomed along the border for the humanitarian and public health reasons. As such, political and epidemic pressures have provided care opportunities to the border populations, including the Karen undocumented migrants. The undocumented migrants have been allowed to cross the border as illegal migrants. In the next two sections, I review the ethnographies of Karen people, followed by the social history of the Karen in Burma, and elucidate their political economy of everyday suffering in the borderland.

2. Previous Ethnographies of the Karen

The Karen live in the hills and valleys both in Thailand and Burma, and along the frontier between both countries. A study estimates that the Karen-speaking population numbers between four and six million in Burma and 400,000 in Thailand (Delang 2003). Previous studies of the Karen have investigated ethnic aspects of the people and their new cultural and environmental adaptations. Their findings contributed to the discussions of what made “Karen-ness” as distinctive ethnic groups (Hinton 1979; Keyes 1979; Kunstadter 1979). In 1941, the estimated population of the Karen in Burma was over 1.6 million, according to Burmese government census during the British occupation in 1941 (Rev. Loo Shwe, 2006:1). Another study suggests that the number of the Karen in the 1931 Burmese Government Census recorded 1,367,999 Karen in Burma, which at that time held about 14 million as their entire national population (Renard 2003: 8). However, given the political situation of the Burmese government at the time, the Karen claimed that these estimations were vastly underestimated.

In Thailand, there are two main Karen sub-groups: Sgaw and Pwo Karen. While Sgaw tend to live in the hills and valleys in northwestern Thailand, Pwo Karen tend to inhabit in plains of the western Thailand. These two subgroups differ not only in their language, location, but also religion. In Thailand, while both Sgaw and Pwo have adopted Thai customs, many Sgaw Karen communities adopted christianity. Pwo Karen communities tend to adopt Buddhism. Yoko Hayami analyzed that the dichotomized views of “hills vs. plains, swidden/dry-rice vs. plains/wet-rice cultivation; and non-Buddhist animists (and Christian converts) vs. Buddhists” and has found these tropes are still common in studies of mainland Southeast Asian peoples (Hayami 2004:11). Ethnographies of the Karen in Thailand showed that both Christian Karen or Buddhist Karen maintain animistic elements in their people’s beliefs and healing rituals.

Historically, the Thai government has paid little attention to the borderland people and their border activities because the borderland functioned as a buffer zone between Thailand and Burma (Tongchai 1994). Across the Salween River, the Western frontier of Thailand is adjacent to the Karen State of Burma where the ethnic minority people have been occupying the region for centuries. The Kayin state formed a dynamic frontier between Thailand and Burma because they gave “allegiance” to both sides since the late 17th century (Tongchai 1994:98).

In contemporary Thailand, the Karen and other ethnic minority peoples have often been described as *chao khao*, which means “the highlanders” or hill tribes in Thai language.⁴⁸ despite the discriminatory connotations in the term, *chao khao* is still used to describe Karen

⁴⁸ This *chao khao* has double meanings: *chao* means people and *khao* means mountains, thus combined it means “mountain people”, but it emphasizes “otherness” among the lowland Thai societies.

people and other ethnic minorities by lowland Thai people. This *chao khao* has double meanings: *chao* means people and *khao* means mountains, thus combined it means “mountain people,” but it emphasizes “otherness” among lowland Thai communities. These contemporary ethnographies of the Karen in Thailand have been produced by many ethnographers who have conducted research in Karen communities mostly in Thailand (Buadaeng and Boonyasaranai 2008; Gravers 2008; Hayami 2000; Iijima 1979; Keyes 1979; Kunstadter 1979; Laungaramsri 2003; Pinkaew 2003; Sittikrienkrai 2007; Walker 2001).

The Karen in Burma have more diversity than the Karen in Thailand. The Karen, or Kayin in Burmese language, are comprised of Sgaw, Pwo, Pa-O, Padaung, Red Karen (Karen-nii), and other small groups. In Burma, the majority of the Karen still live in the Karen (Kayin) State, which is in the eastern region of Burma, and there are some enclaves in the Mon State, the Kayah State, Pegu Region, and still quite a few live in the Yangon and Irrawaddy Regions. Although the Karen in Burma live in several enclaves, they still maintain a strong ethnic identity as Karen in the nation-state mosaic. Like the Karen in Thailand, many Paw Karen people are Buddhists, while some Sgaw Karen communities in Burma practice Christianity; however, far more Karen in Burma are Buddhist, and predominantly inhabit in rural areas and are not directly involved in political activities (Hayami 2004: 23).

Most of the Karen still live in Burma and their communities are dispersed across plains, hills, and mountain areas where people engage in lumber trade, or collecting scarce mountain resources such as herbal medicines and fruits. While most of the Karen live in Burma, some groups live in the northern part of Thailand, and regions adjacent to the Thai-Burma border. Despite the geographic dispersions and various subgroups within the Karen population, the Karen in Burma still hold a strong ethnic identity. In the late nineteenth

century and early twentieth century, foreign missionaries tried to expand their activities in Burma. Yet they were not successful in converting Burmese Buddhists into Christianity, because the Burmese belief was monopolized by Theravada Buddhism. Therefore, the missionaries turned to ethnic minorities who inhabited the hills and mountains. The missionaries were fortunate because Karen oral history resembled the missionaries' teaching (Marshall 1927). The main storyline goes as this: "A father god had three brothers and the eldest son was a Karen, the middle was an Indian (Burmese), and the youngest was a white brother. One day, the father gave a golden book to the three brothers; however, the older Karen brother was lazy, and he threw the book away and stepped on it, while the youngest white brother picked the book up and secretly kept it himself. That is why a white brother learned the secret knowledge and he could pass it on to his young generations to prosper his society. That is why the Karen's old written characters resembled chicken's footsteps and they remained poor, uneducated, and ignorant, while his white brother became well-educated, advanced, and successful.

With this Karen oral history, it was not difficult to understand why Karen believed in missionaries. Soon, American Baptist missionaries and British Presbyterian found that converting the ethnic minority hill peoples was more successful than Buddhist Burmese (Renard 2003). Educational opportunities were used to win over the ethnic minority peoples in the hills and mountains, where the Burmese government hardly provided anything. Karen parents willingly sent their children to missionary schools, where children studied the English language. Later, these ethnic minority youths were preferred by the colonial administration over the ethnic Burmese (Thawngmung 2012:23).

In the following section, I analyze the social and political history of the Karen in

Burma. The political displacement of the Karen people and historical accounts of persecution was an important factor in the construction of Karen identity of the borderland people (Bodeker and Neumann 2012; Horstmann 2012; Sharples 2012). I discuss a brief historical background of the Karen in Burma, and how Karen ethno-nationalism sentiment has been created through the decolonization process in Burma.

3. The Social History of the Karen in Burma and the “Black Zone” in the Borderland

According to Yoko Hayami, the record of the Karen appeared in pre-colonial Burma as early as the 1740s, and by the mid-eighteenth century, they were well integrated in the regional economy in Burma, and paid tribute to the Burmese on the periphery (Hayami 2004). Clive Christie suggested that the Karen status was changed by two stages in the nineteenth century (Christie 2000). In the 1820s, American Baptist Mission successfully converted some Karen people in eastern Burma into Baptist. The missionaries created their educational and religious networks within the Karen region. In the same decade, a war between British in Bengal and Burma ended in 1826 with a peace treaty, and the British annexed Tenasserim region, where the colonial administration had negotiated with the Karen. The Karen supported the British during the next two Anglo-Burmese wars, thus, the antagonism between the Karen and the Burmese in Burma had risen in the modern history of Burma (Christie, *ibid.*).

In *Art of Not Being Governed*, James Scott discussed the relationship between ethnic minority peoples in the remote mountains and the central areas of Southeast Asia. He suggested that highland peoples in Southeast Asia moved further up into the hills and mountains to avoid being included within the state and to avoid the central powers. As a result of their “state-evading” strategy, one can find that Karen villages highly dispersed in

the highlands, and they relied on subsistence agriculture strategies found in the hidden in mountainous areas (Scott 2009:182). This view has been contested by historians and anthropologists in Southeast Asia because the hypothesis views that the highland people has an agency.

The annexation of Burma by the British in India was completed after the three Anglo-Burmese wars (1824-1826, 1852-1853, and 1885). Throughout the nineteenth century, British colonization shaped the modern history of Burma (Charney 2009). Colonial rules disrupted traditional social relationships among peoples in many ways. During the British colonial period, the administration used Indians and ethnic minority groups such as the Karen to control Burmese independence activities. The British strategy of “divide-and-rule” suppressed the Burmese by appointing ethnic minorities to elite positions in the education, civil service, and military sectors in the country (Than 2005). However, this strategy also resulted in resentment toward the ethnic minorities from Burmese people during the colonial period.

In January of 1942, the Japanese invaded in Burma and conquered Mandalay. Believing in the Japanese propaganda, many Burmese believed that the Japanese would free their country from the British colonialism and they subsequently fought against the British army. On the other hand, the Karen and other ethnic groups supported the British and some engaged in guerrilla warfare in the mountains to attack the Japanese army. This historical relationship between Burmese and the Karen under the British colonialism and the Japanese occupation of Burma during World War II shaped the contemporary antagonism between the two groups.

For Burmese, World War II interrupted their nationalist movement. During these

years (1939-1940), a few radical patriotic Burmese nationals, which included Aung San, established Burma Independence Army (BIA), which received military training by Japanese army, and then came back to Burma along with the fascist Japanese army. However, Aung San and his comrades found the true intention of the Japanese army, thus, they turned the Burma National Army (BNA), a successor of BIA, against the Japanese army from 1944 through early 1945 (Christie *ibid.*:110). After the war, Britain maintained control over the Burmese politics, but gradually relinquished the colonial power to the self-government by Burmese. Before Burma attained independence from Britain in 1948, there was an important agreement between Burma and ethnic minorities of the Kachin, Shan, and Chin (Christie 2000: 113). The Panglong agreement was reached in February 1947, and granted autonomous regions in Shan, Kachin regions. However, being suspicious of the Burmese intention, and so much hostility in between the two groups, Karen did not send their representative to the Panglong meeting. The Karen felt betrayed by the British, and they gathered mass meetings for the subsequent years and called for the Karen independent state in the Union of Burma. In 1949, some Karen formed its political organization, the Karen National Union (KNU) to designate the claims of an autonomy in the Karen State in eastern Burma. The Karen National Liberation Army (KNLA) was formed shortly thereafter (Christie 2000).

The nationalism and separatism of the Karen were clearly influenced by the idea of ethno-nationalism, which assert claims on territory, sovereignty, and political rights by the autonomous ethnic people who share cultural commonality and traditions based on myths of origins (Rajah 2002).

After the war, the Karen people's self-determination and anti-government movement was met by a backrush by brutal oppression by the *tamadaw* (Burmese army). As such, tens

of thousands Karen people were forced to abandon their land and properties in their homeland in eastern Burma to seek temporary shelters in various villages along the border, and refugee camps (Karen Human Rights Group 2001). The complexity of the ethnic conflict further intensified when there was a separatist movement and the creation of a pro-Burmese Karen army group, the Democratic Karen Buddhist Army (DKBA).

In the early 1980s when the Burmese government marched into the eastern border regions governed by ethnic minorities such as the Karen, Karenni, and Hmong (Mon), the army persecuted their ethnic minority regions. The Burmese government has become known for having one of the worst histories of human rights violations in the world (Bowles 1998).

Persecuted ethnic minority peoples fled to the border villages and refugee camps in Thailand from forced labor, forced relocations, military draft, murder, robbery, rape, and violence, such as armed attacks and landmines (Karen Human Rights Group 2001). The ethnic conflict between the ethnic minorities and the Burmese government became one of the longest internal civil wars in the world (Lee et al. 2007). Since the 1980s, more than 120,000 refugees from southern part of Burma fled to temporary shelters in Thailand, and another 2-3 million have left their homelands in Burma to live in the borderland in vulnerable situations for threats, disease, and exploitations (South and Jolliffe 2015: 4). The refugee camps in Thailand have been accepting various ethnicities, including Burmese, but the largest group in the refugee camp inhabitants has been ethnic Karen (UNHCR 1996).

Meanwhile, the Burmese government declared that the ethnic conflict areas were labeled “black zones” and no humanitarian relief activities were to be allowed in such areas. Lee et al. (2015) points out that the United Nation agencies provided \$47 million in 2000, the European Union 11 million euros from 1996 to 2000, and thirty international

nongovernmental organizations (NGOs) also provided \$7 million per year to humanitarian relief purposes to Burma. Despite the huge monetary flow, none of the SPDC-sponsored or international non-governmental organization (NGO) health activities have been reported in the black zones (Lee et al. 2015: 34). As such, international relief did not reach the population in need. Although the disturbance of humanitarian aid activities by the SPDC became gradually alleviated under the peace negotiations between the ethnic minority groups and the Burmese government in post-conflict areas, Karen people in the borderland were still facing structural violence and inequalities due to scarce resources and vulnerability because of their non-citizenship status and long-term internal political conflict. Only recently has the Burmese government started allowing international groups to conduct their activities in the fields of health services, education, medical research, and infrastructure, which brought more safety-net to some returned internally displaced persons (IDPs) in Burma.⁴⁹

Since 2011, most of the anti-Burmese Ethnic Armed Groups in Burma, including the KNU, have either agreed or negotiated a ceasefire with the Burmese government (UNHCR 2015). The 2015 election in Burma further accelerated the ceasefire negotiations, and many IDPs who used to live in refugee camps or border villages without citizenship gradually started moving back to their homeland in Burma. However, recently returned Karen migrants reported that they were afraid of landmines in their newly settled villages, and the presence of *tamatdaw* in and around their villages threaten the returned Karen people (Karen News 2018). In that sense, the precarious political status among the Karen IDPs is still an ongoing issue. As the UNHCR and the Thai government project toward resettlement among the IDPs of all remained nine refugee camps in Thailand gradually, the officials expect that these

⁴⁹ Interview with a Burmese SMRU doctor in December 2015.

international humanitarian aid activities would move to Burma; yet without basic infrastructures such as schools, hospitals, water systems, electricity, not to mention clearance of landmines, the resettlement process has been slow. In the next section, I shift my focus from the social history of the Karen in the borderland to their contemporary life circumstances as undocumented migrants and refugees in the borderland.

4. Karen Undocumented Migrants and Refugees on Humanitarian Aid

The Karen in Tak Province are known to have the highest malaria case fatality rate (3%) and the largest number of deaths due to malaria-related infections in Thailand (Richards et al. 2009). The Thai public discourses on the Karen undocumented migrants as ‘poor, ignorant, illiterate, and disease carriers’ images coupled with the epidemiological discourses in Thailand have often been a powerful instrument for carrying out health interventions for the undocumented peoples (Institute for Population and Social Research Mahidol University, 2012). As I have shown in the Introduction, despite the fact that confirmed malaria cases were much higher among Thais than non-Thais in Thailand in Year of 2015,⁵⁰ the Thai public health discourse showed quite contrary that malaria was not a common disease among Thais, but rather that migrants were responsible for transmitting malaria into Thailand and infecting Thai people.

The Thai public health discourse often describe the people who engage in cross-border activities as threat to Thai public health. Dr. Wichai, The Director of the Bureau of Vector-Borne Disease at Thailand MOPH summarized the concern:

The problem in Thailand (in malaria control) is that there is multidrug resistant malaria. It is hard to control the parasites because people along the border are very

50 Confirmed malaria case numbers in Thailand in the year 2015 were: 11,959 among Thais; 2,474 among M1 (non-Thai citizen living in Thailand for more than six months); 4,448 among M2 (non-Thai citizen in Thailand for less than six months); and 2,233 among refugees (Source: Bureau of Vector Borne Disease, Thailand MOPH, in WHO 2015).

mobile. We don't know their health access in their own communities, migrants' background, and they present their symptoms at the clinic very late. That's their typical attitude.⁵¹

Noting that the mobile population refers to the people who live in the borderland, Dr.

Wichai's statement also includes ethnic minorities who do not have Thai citizenship, even though they have been living in Thailand for a long time. Like Dr. Wichai, various health professional workers who work in the malaria posts or Thai hospitals in the border regions complain about the people who came late to present their health symptoms at the health facilities. A Thai nurse who worked at a Thai government hospital in a border region once told me a story of a Karen patient and family:

Those hill tribes are poor and they are pitiful. They often come to us (health post or a hospital) late. One time we had a Karen family from a village near the Kanchababuri Province (south from the Tak Province), who traveled through jungle paths in the mountain, and reached to one of the health posts in a remote Karen village. The patient was a little boy and he had severe complicated malaria. All the family was together. We had to send a van to pick up the family from the health post because if they walk, the mountain path takes about seven hours. When they arrived at the hospital, the child patient was unconscious and had convulsions, so he was immediately admitted to Emergency Room. The child stayed at the ICU for five days and we thought he would not survive. But he did! It was good for him, but the hospital made a huge debt. While the patient stayed in our hospital, we provided the whole family three meals everyday. But because they were poor, we could not charge them. The hospital eventually used the budget to pay for such poor patients.⁵² According to the nurse, such stories of poor migrant patients and underfunded Thai

hospitals were common especially in the border districts. To fill the gap in health care among the IDPs, various humanitarian aid organizations, both international and local, have been convening to support them, especially in the fields of health, education, and sheltering.

Prior to the political insurgency in Burma, the Thai government had hosted refugees from neighbor countries such as Laos, Cambodia, and Vietnam, supported by the United

⁵¹ Interview with Dr. Wichai Sattimai at Thailand MOPH on October 25, 2012.

⁵² Personal conversation with Ms. E, a Thai nurse at a Thai hospital in the Umphang District in the Tak Province.

Nations. The Thai government provided shelter for the IDPs in refugee camps. However, there were speculations that the Thai government might have utilized the ethnic conflicts of its neighbor country in order to use the ethnic minority area as a “buffer” zone to minimize the political but did not grant them freedom to travel outside of the camps (Bowles 1998).

At first, the Thai government’s attitude toward the refugees from Burma was not to reject the displaced people, but to take care of the refugees within the Thai government’s capacity to avoid international attentions. The Thai government had experienced the similar situation when Indochina refugees flocked into Thailand, thus they were hesitant to actively provide relief aid to refugees from Burma, because it would attract more refugee population to come to their country and give them the rationality to stay longer period of time under the United Nations’ refugee protection protocol (Sharples 2005). However, as more people started arriving in Thailand and the United Nations Higher Commission for Refugees (UNHCR) pressured the Thai Ministry of Interior (MOI) to act upon the humanitarian crisis, thus, the government allowed NGO groups to provide the IDPs shelters, food, and primary healthcare support. There were only a few NGOs at the beginning of the 1988, namely the Burma Border Consortium (BBC), Médecins Sans Frontières (MSF), and the Catholic Office for Emergency Relief and Refugees (COERR) (Sharples 2012:87). Non-NGOs, such as SMRU and Mae Tao Clinic also started operating in several locations along the border in the 1980s.

The Burmese government accused Thai government of trying to protect those refugees and indirectly contributing to support their anti-Burmese government activities because during that period, the Karen groups’ political body remained intact and was quick to respond to the internal political turmoil in Burma. Due to the pressure from the Burmese

General, the Thai government made an agreement with Burma not to intervene the internal conflicts and provide further assistance to those refugees. Out of the suspect by the Burmese general, the Karen in Thailand assisted the insurgent activities against Burma by providing resources and arms to their soldiers (Sharples, 2012:87).

The humanitarian crisis in Burma brought relief agencies and people from various parts of the world. In the 1990s and the 2000s, the international media depicted the Karen refugees and other ethnic minority peoples who were fleeing from their homeland into jungles and mountainous hills (BBC News 2000). Resettled Karen in western countries also broadcasted the human rights violations by the Burmese junta, and asked international societies support for the refugees and migrants. The image of politically contested zone in the Thai-Burma borderland proliferated in the imagination of people who suffered from civil war among the international societies. At the same time, the ambiguity of governance in the borderland creates a space for international relief volunteer workers and organizations, especially in Mae Sot town in the Tak Province in northwestern Thailand.

As many NGOs and non-NGOs began engaging in humanitarian aid activities on the IDPs in informal capacity, meaning their activities were not approved by the Thai government, the government had to make agreement with the humanitarian relief groups. However, the Thai government agreement brought tight control in the camps and regulations on the IDPs, who used to enjoy relatively free autonomy within the camps. The Thai Royal Border Police sent their soldiers to control the camps, and fenced the camps from outside, so that refugees could not go outside and come back to the camps freely anymore. NGOs in the refugee camps had to follow the Thai government's rules of what it should not provide to the

refugees.⁵³ The Karen refugees on the other hand acted a passive role in the refugee camps. While most of refugees who I talked in Mae La camp in 2011-2013 reported that although they were hoping to go back to their homeland in Burma someday, they could not envision it in the near future because of the economic condition in Burma and their skepticism toward the Burmese government' promise. These refugee informants criticized both the Thai government and the UNHCR for the resettlement plan without planning (From personal field note marked on April 10, 2013).

5. Conclusion

By focusing on the Karen in the Thai-Burma borderland and their history, this chapter discussed their social historical relationship with Burma and Thailand and contemporary position in the borderland. The historical background of the Karen is important in order to understand their contemporary political economic situation, and the reasons why they have come to receive humanitarian support along the border. The contemporary political economic of the Karen undocumented migrants and their everyday suffering in the borderland was traced to the colonial history and the Japanese invasion in Burma during World War II. The British used a deliberate “divide-and-rule” policy in the colonized territory of Burma (Thang U 2001) that gave non-Burman ethnic groups hope for independent states, including the Karen. The British implemented this policy and controlled Burmese by promoting ethnic minorities to higher official ranks. They also used ethnic minority guerrillas to pursue clandestine resistance during their colonial administration. Ironically, the end of British

53 The Thai government allowed NGOs to provide supports in health, education, food (limited only basic food items such as salt, fish paste, cooking oil, and rice), and housing with natural materials. When I was conducting fieldwork from 2011 through 2013, building individual houses for refugees using concrete in Mae La refugee camp was prohibited, because it would encourage refugees to settle in the camps permanently (From personal conversation with a Karen refugee in Mae La camp, April 2011).

colonial rule at the conclusion of World War II heightened the ethnic conflicts between the Burmese government and ethnic minority groups, rather than leading to the Karin establishing their own independent state.

The Thai-Burma borderland expanded its space to accommodate political refugees and humanitarian aid peoples from outside. The practice of crossing the national border became normalized not only by the undocumented migrants and refugees, but also by international researchers and volunteer staff, despite the labelling of some regions of Thai-Burma borderland as a “black zone” by the Burmese government. Although such relief activities for the Karen IDPs were restricted in Burma, the influx of humanitarian aid created much needed access to basic necessities among the people who were in vulnerable situations along the border.

In the refugee camps in Thailand, people faced new threats and regulations from the Thai government, which prohibited the refugees from engaging in employment beyond the their regulated areas, attaining higher education and establishing permanent residence. Thus, people without citizenship in either Burma or Thailand had to face structural inequalities. Until now, the Karen undocumented migrants still do not have comprehensive health care, aside from those migrant clinics run by the NGOs and international groups. Thus, Karen they rely on the humanitarian aid support as passive relief-recipients.

Some studies argued that the political displacement and struggles empowered Karen refugees in exile, and helped them construct identities of ‘homeland’ and ‘borderland’ (Bodeker and Neumann 2012; Horstmann 2012; Sharples 2012). Although I agree that there are such strong empowerment movements and self-determination among the Karen, especially among the elite Sgaw Karen exiles who had arrived Thailand earlier than 1990s, I

argue that Karen agency needs to be carefully examined by considering other majority Karen IDPs, including the undocumented migrants in the borderland. The undocumented migrants have been less dependent on such humanitarian aid from outside compared to refugees in the camps, and so their health has been affected by the lack of healthcare options and the insecurity in the borderland. In the next chapter, I will focus on Karen undocumented migrants, and discuss how their healthcare access needs are met by the health interventions of the international malaria research unit.

Part II: Ethnography of the Malaria Research Clinics

CHAPTER FOUR EVERYDAY LIFE AT THE SMRU

I arrived at the main office of the Shoklo Malaria Research Unit (SMRU) in Mae Sot. It was ten minutes before the departure. Several vehicles and vans were parked in front of the office, waiting for the clinic staff to grab their seats and for drivers to load medical supplies. International doctors were quickly exchanging their patients' information by showing their lab results written on paper slips. A clinic pickup truck left the main office at 8:00 am sharp, then drove on a highway that shared agricultural fields on plateaus in the Thai-Burma border. It is a summer time in Thailand in the mid-April, and the air is dry and hot. The open-air truck, loaded with medical supplies and the clinic staff, turned from the cemented agricultural road and continued to drive on a small dirt path. It passed small vendors and resident houses that were made of bamboos, woods, and leaf-roofs, and proceeded to the SMRU compound cautiously. The SMRU clinic was located behind the tall, steel-made gate that separates a small sleepy Thai community from the river banker, where SMRU clinic stands on.

The truck stopped in front of the clinic at 8:45 am. I got off the pickup truck, exchanged greetings in Sgaw Karen language with the staff who had already started working at the clinic and looked over the waiting area. There were already more than fifty patients in the waiting space at the out-patient ward waiting for their names to be called by Karen staff. Upon arrival at one of the SMRU clinics, the Karen health staff recorded the weight and body temperature of a patient. If the temperature showed more than 37.8 Celsius degrees, the patient was referred to check the blood. A tiny amount of blood sample was taken from a tip of finger by pricking a razer blade and the health worker collects a small amount of blood by

a tiny syringe to apply on the reagents of the rapid diagnostic tests (RDTs). It would take about 15-20 minutes to diagnose whether the person was contracted malaria and what kind of malaria parasites the individual had contracted. If the result was positive, the patient had another blood test for smear test for further microscopic examination.



Figure 4.1. Patients waiting at the SMRU outpatient clinic.

This chapter explores the SMRU as an international malaria research institution, and how it operates biomedical practices and health interventions at their field clinics along the Thai-Burma borderland. The SMRU is a space where malaria treatments are studied and tested on tens of thousands of patients. Numerous global health partnerships collaborate with the SMRU on research on technical innovations, new antimalarial regimens, and clinical study protocols. The local clinics have become biomedical intervention sites where those identities are stressed and the image of patients at risk and in need is fortified through various phases of biomedical intervention. At the SMRU clinics, patient bodies are examined and

their biological samples are carefully collected to be examined and tested under the microscope.

The clinic's space also creates not only biomedical interactions between patients and practitioners, but also social relationships among clinic practitioners. Medical anthropologists have been conducting ethnographic research at various biomedical sites, such as hospitals, medical schools, health institutions, clinical laboratories, and pharmaceutical industries. Fieldwork at medical institutional sites provide a rich ethnography of biomedical practices, and how they are practiced differently from one another, despite their standardized protocols and universal procedures from medical textbooks (Mol 2002, Street 2015; van Hollen 2013). Take health intervention practices for infectious diseases as an example; studies have found that there are gaps between global health ideals and local reality (Kamat 2013; van Hollen 2013).

The SMRU and its clinics also provide spaces where various groups of people, including Karen undocumented migrants, international research doctors, local Karen staff, media, and pharmaceuticals, can interact with each other to find malaria parasites, treat patients, and study the disease. The SMRU maintains spaces that embody the dominance of biomedicine over other forms of local practice.

By examining health intervention practices for malaria at the SMRU research clinics, I analyze the ways in which the practitioners negotiate the social, political and economic realities in the Thai-Burma borderland. Based on this standpoint, this chapter examines the social relations of biomedicine. I contextualize its practices within epidemiology, global health, and local clinical settings. I investigate how biomedicine identifies malaria as a biomedical disease by performing its clinical practices socially to confirm disease cases at

the local clinical setting.

This chapter starts with an ethnography of the SMRU as a biomedical research institution, which has been providing free malaria diagnostic tests and treatment for migrants and refugee populations along the Thai-Burma border. I investigate these questions: How are biomedical technologies, knowledge, and medical substances used to locate malaria within the local population? How does clinical data produce epidemiological knowledge, sociopolitical narratives, and public health discourses on malaria? From the institutional history, I examine SMRU as malaria intervention sites in areas in the borderland burdened with MDR parasites. Then, I explore how the biomedical landscape of the SMRU clinics is constructed by analyzing everyday clinical practice. I also analyze exploring practitioners' narratives on Karen patients and the patient-practitioner interactions.

1. Unfolding the Field: Malaria Research Clinic

On January 16th, 2013, I visited Wang Pa clinic, one of the field clinics run by the SMRU. As I peeked into an in-patient room, I saw a father in his mid-twenties among other patients who was affectionately holding a girl sleeping peacefully in his arms. A male Karen nurse told me that the little girl arrived three days ago and was diagnosed with severe malaria. Even after the three-day treatment, the girl still seemed in poor condition, lacked energy, and her skin was slightly jaundiced. The father had another daughter who was also diagnosed with malaria, but only the younger daughter looked very sick. The family were Sgaw Karen from a Karen village in Burma. The two girls wore Karen traditional clothes, which were cotton-made, one-piece, and down to the knee, and only the youngest was wearing a thick jacket on top of the Karen clothes. Her hair was bound in two sides with colorful bands, and her ears were pierced and pieces of unclean cotton threads were threaded

through her pierced earlobes.

The sleeping girl's name was Naw Paw and she was diagnosed with hyper-malaria *P.falciparum*, which means she has more parasites found in her bloodstream than average malaria patients. She was brought to Wang Pa clinic by her father, along with her six year-old sister who was also found to be *P.falciparum* positive but was not in severe condition. Dr. Aung, a Burmese medical doctor who was in charge of the SMRU-Wang Pa clinic jokingly told me, "This girl was like a movie star yesterday, when CCTV (the Chinese News Television) crew came to take videos at the clinic." I also saw the TV crew the day they visited them. The TV crew was following Dr. Nosten, the Director of SMRU, and Dr. Aung with a video camera with the company's logo on it. International media's visit at SMRU clinics are not uncommon. In fact, Dr. Nosten clearly understood that the media exposure was important to appeal the SMRU's commitment to global health efforts to malaria control. For international media, SMRU clinics were far more ideal locations than Thai hospitals or Thai villages in border regions to show the malaria problem among undocumented migrants who fled from Burma. The SMRU clinics were always crowded with undocumented migrant patients, who were in their ethnic attire, and looked quite exhausted from their trips from Burma just to receive treatment on the other side.

Naw Paw had experienced high fever, 40 celsius degrees (104 F) for three days at home. At that time, the father was not at home because he was logging in the forest. He was not reachable on his cellphone due to the lack of signal. His wife went to buy *yaa-chud* (cocktail pharmaceutical drugs in Thai) from a village corner shop where people could buy over-the-counter drugs, and she asked for fever medicine. The shop owner sold her *yaa-chud*,

which contained amoxicillin and paracetamol⁵⁴ and another drug, whose name she did not recall. According to Naw Paw's father, there were several *yaa-chud* shops in a village called Pu Weh, and treating fever with *yaa-chud* was common among the villagers. After three days of taking *yaa-chud*, Naw Paw's condition did not improve. Her father came home and took Naw Paw to Thii Wah Klee village where there was a village health worker at a clinic.

Thii Wah Klee village was located twenty minutes away from Pu Weh village. The health worker checked Naw Paw's blood smear by a rapid malaria test kit and confirmed that she was *P.falciparum* malaria positive. Then the health worker provided the father Dihydroartemisinin- piperazine (DP), a blue colored malaria prophylaxis tablet for his daughter to take each per day for three days. According to the father, he paid one thousand kyat for a *lema* (patient clinic ID and medical record book) at Thii Wa Klee clinic, but the drug cost and laboratory fees were free. The health worker told him that if the daughter's condition did not improve, he should take her to the SMRU-Wang Pa clinic. The next day, her father took Naw Paw to SMRU-Wang Pa clinic. The transportation from Pu Weh village to the SMRU-Wang Pa clinic by motorcycle cost him 600 Thai baht (about USD 24), which is about 20% of the father's monthly labor, and it took them four hours to reach the clinic. His monthly earnings from the lumber work was 3,000-4,000 Thai baht (USD 120-160), but it was a seasonal job that was available only in winter when there was no rain. Meanwhile, his wife took care of their children at home, thus she did not bring any income to the household. The family had another two-year-old toddler who was taken care of by his wife at home at the time of their daughter's hospitalization.

Naw Paw stayed in the SMRU-Wang Pa clinic for three nights. Although there was

⁵⁴ Both are in common use as a painkiller and as a fever relief medicine in Thailand.

no privacy at the clinic's in-patient ward, it was warmer during the night than sleeping in their bamboo house in the village because there were no holes and gaps in the wall and floor. At the inpatient ward, they were even provided hospital meals cooked by a Karen woman three times a day free of charge. What was more important for the father was that nurses came to check Naw Paw's blood many times during her hospitalization.

On the day that Naw Paw was allowed to be discharged, the father even asked a medic to have his elder daughter to be tested once more, because they were going home and it would be difficult for them to receive treatment immediately. The father recalled and quietly told me a story, saying: "the first day, the medical aid checked the two girls, but after three days of treatment, they did not check the older one. I wanted to make sure that the two girls have been treated completely and are now 'parasite-clear'" (personal interview with the father at Wang Pa clinic). He was happy that the two girls survived and now they were going home to reunite with family in Pu Weh village. The charge for their three-day hospitalization, medical and clinical charges for the two girls, prescribed malaria drugs, nine meals, as well as an insecticide-treated mosquito net for the whole family were free. He only paid 20 Thai baht (less than USD 1) for two new *lema* for his two daughters at the SMRU clinic.

The SMRU provides medical relief for malaria patients, support mother and child health among the refugees and migrants from Burma. At the clinics, practitioners also conduct clinical research to develop effective diagnosis tests and treating malaria along the Thai-Burma border, where drug-resistant malaria parasites are found.

The SMRU is one of the field stations of the faculty of Tropical Medicine, Mahidol University in Bangkok, and its clinics and laboratories are operated by the collaboration of

the Mahidol Oxford Tropical Medicine Research Unit (MORU).⁵⁵ MORU's largest financial sponsor is a British-based science research institution, Wellcome Trust, which was established by Sir Henry Wellcome, who obtained British citizenship as a U.S. citizen, and established the research institution out of his assets in the United Kingdom. Both MORU and Wellcome Trust act as the backbone for the operations of SMRU, and the SMRU as a unit functions as a part of larger global health research network to develop effective and accurate means of diagnosing and treatment of malaria, as well as other infectious diseases, such as typhus, tuberculosis and leptospirosis (MORU website, 2018).

The main office of the SMRU has its main office and laboratories in Mae Sot in the Tak Province of the northwestern Thailand. The unit is run by a French doctor, Dr. François Nosten and an Australian physician and obstetrician Dr. Rose McGready and many other local staff. As of today, it holds over 400 staff,⁵⁶ including medical doctors, obstetricians, scientists, nurses, midwives, pharmacists, demographers, statisticians, computer specialists, janitors, drivers, volunteers, and medical interns from mostly Euro-American countries.⁵⁷

The main work of these international research doctors, lab technicians, and epidemiologists are to conduct medical science research and make publications in major science journals. These journal articles and reports generated from SMRU lab works attract lucrative funding resources from various governmental and non-governmental organizations and create new discourses on drug-resistant malaria. At the SMRU laboratories and clinics,

55 MORU in Thailand was established in 1979 as a research collaboration station between the Faculty of Tropical Medicine at Mahidol University in Thailand, Oxford University and Wellcome Trust in the United Kingdom. MORU's main office, which is located in Bangkok, supervises field clinics and research sites that spread in Southeast Asia, South Asia, and Africa (The Democratic Republic of Congo).

56 The number has sprung up from about 340 since I ceased my fieldwork at SMRU in April 2013.

57 During my fieldwork, there were ten international medical doctors who were Burmese, Dutch, British, American, Australian, French, and Thai nationalities at different times. There were also Swiss, Italian, British, and Thai nationalities, who worked as epidemiologist, entomologist, biologist, statistician.

research doctors and local practitioners engage in finding cases that contribute to address special attentions to local malaria.

The majority of local staff were Thai citizens and undocumented Karen migrants. The hierarchical structure among the staff was clearly visible within the research unit. Many local Karen staff often occupied lower-level clerical, clinical, administrative, and miscellaneous positions at the SMRU clinics. However, a few Karen also had received clinical training from the Médecins Sans Frontières and NGO higher education schools within the refugee camps in Thailand. Those Karen filled important positions at clinics such as: medic, pharmacist, nurse supervisor, nurse, microscopist, ultrasound sonogram reader, clinical technician, and antenatal clinic trainer.

The way the SMRU has been recruiting many undocumented Karen migrants resembles the British colonial administrators who preferably recruited local ethnic minority peoples such as Karen in Burma over Burmese. However, the SMRU's recruitment method seemed to depend on rather localized reasons. First, the majority of patients at SMRU clinics were Karen and Burmese. Because of the language competency, hiring local staff who spoke the local languages (Sgaw Karen, Pwo Karen, Burmese, or Thai) was practical. Second, by recruiting local populations, especially those who do not have citizenship thus have limited job opportunities in Thai society, SMRU has been providing numerous job opportunities to those people, who are otherwise unemployed. Third, some bright Karen refugee children can receive higher education in the Mae La refugee camp, and they learn English from international NGO workers, thus, they become more favorable workers for SMRU international staff. The colonial relationship between British and Karen, as well as adaptation of Christianity among many Sgaw Karen (Hayami 2004), also enabled Karen people to have

less psychological barrier to learn English. Fourth, local Karen staff in the SMRU are often related to each other through marital, biological, and communal relationship. Individual networks do seem to influence the SMRU recruitment of local staff.

Nevertheless, job opportunities provided by the SMRU give local Karen staff hands-on experience at clinics. Compared to the local staff, recruitment of international doctors and scientists are more straightforward. However, there is an invisible hierarchy among medical doctors and scientists, who were considered at the top of hierarchy within the SMRU. A few medical doctors in the SMRU main office told me that they were hired through the SMRU, thus they used to receive smaller amount of salary compared to those international medical doctors and scientists who were employed through MORU. On top of the difference in salary, those who were hired through SMRU had no health coverage support, thus they were afraid of getting sick.

In sum, it is important to understand the structure of the organization, its research connections with global health partners, and its operation with the diverse ethnic groups and nationalities. As with other institutions, SMRU also has a structural and hierarchical preferences on recruitment terms, that potentially creates frictions between various groups.

2. History of the SMRU and its Malaria Interventions in Pregnancy

I visited one of the SMRU clinics near Mae Sot in March 2011 with Dr. Francois Nosten, the Director of SMRU. Along the way, he explained to me how he started the first SMRU clinic in the Shoklo Refugee Camp in northern Thailand. The Shoklo Refugee Camp was mainly occupied by Karen ethnic people who fled from the Karen State in eastern Burma to seek refuge in Thailand in the 1980. Malaria has been endemic in forest and mountain areas in northern Thailand provinces, even before the refugee population fled to Thailand;

however, after the influx of huge refugee populations, the malaria prevalence of the northern Thai regions became worse. Out of epidemiological urgency, the Thai government was alerted that the poor refugee population without sanitation would cause a public health threat to Thai people around the refugee camp. Therefore, the government welcomed the international Red Cross and other NGOs to treat malaria cases among the refugees in the camp. As such, the SMRU clinic was always flooded with malaria patients.

When Dr. Nosten launched the field clinic operation of the first SMRU clinic in a refugee camp in Tha Song Yang District in northern Thailand. The first SMRU clinic was made from bamboo and leaf-roofs on a hilly mountain and it started by himself and two local Karen staff, one of whom later became his wife. The drug-resistant malaria had already been a major problem among the refugees. Among them, the most affected groups were pregnant women and small children due to the lack of healthcare. As a young intern doctor, Dr. Nosten experienced his pregnant patients and small children dying from malaria, mainly due to a delayed diagnosis and proper treatment in the refugee camp. He and his staff worked from morning till evening to save those lives who were suffering from malaria and absolute poverty.

Within ten years after its start in 1986, the malaria-caused mortality rate among pregnant women in the camp drastically decreased from an estimated 25 per 1,000 peoples (2.5%) in 1985 to almost zero figure in 2000 (Luxemburger et al. 1996). Approximately 90% of pregnant women in the refugee camp was reported that they had attended the required weekly antenatal clinic at the SMRU clinic (ibid). This fact shows a triumph of the SMRU health interventions for malaria in pregnancy and made the unit famous for their research in the field.

Gradually, the SMRU gained trust from the Karen refugees, particularly among women who were at reproductive age. The health service was simply not available in their homeland due to the lack of health infrastructure in anti-government ethnic minority regions in Burma⁵⁸. Thus, asking them to attend the antenatal clinic and routinizing the blood test for malaria every week were new biomedical experiences among the Karen women. Nevertheless, Dr. Nosten said that these pregnant women seemed to enjoy taking advantage of the new biomedical opportunities, trusting the health interventions by the SMRU.



Figure 4.2. Karen mothers with their children leaving a SMRU clinic

58 Most of the Karen refugees had never attended antenatal checkups before coming to the refugee camp in Thailand, and had had delivered their children at home in villages with support of traditional midwives and family members.

The clinics treat numerous malaria patients, most of whom were ethnic Karen refugees from Burma. The Shoklo refugee camp hosted approximately 9,000 to 10,000 refugees who escaped from the political turmoil in Burma. The Shoklo refugee camp was located 300 meters above sea level in a forested area and its natural environment provided favorable conditions for the malaria vector, *anopheline* mosquito. The river and rice fields near residential areas in the camp became mosquito breeding grounds. When people go to the river to get water, bathe, wash clothes, and farm, they were exposed to mosquito bites, especially during its mosquito feeding time during the dawn and sunset. Two seasonal peaks of malaria (one from May to July and the other peak from December to January) were linked to subsistence activities in the Thai-Burma border. However, despite the natural seasonal pattern, malaria affected people throughout the year in the displaced communities.

According to the SMRU data, in the Shoklo Refugee Camp in the late 1980s, each patient had on average of three malaria episodes per year. Moreover, deaths caused by malaria comprised 15% of all the deaths in the refugee camps along the Thai-Burma border in 1992 (Luxemburger et al. 1996). The same large-scale survey in the camp in the mid 1990s indicated that school children (aged 4-15 years) experienced 1-5 parasitic infections of which 68% were symptomatic. Mi Cho, who has been working at SMRU since its beginning in the camp, shared with me a story of her experience:

I still remember some patients who died after they arrived at the clinic. One of them was a young boy who was about five years old. He reached the clinic after walking hours and hours in the jungle. He had hyperparasitaemia with *Pf.* and fell unconscious before we treated him. We rushed to give him IV (Intravascular antimalarial drugs), but while we were treating him, he died. Nowadays people rarely die from malaria, but we had some patients who did not survive despite of the treatments, because it was already too late. But I was very shocked when the boy quickly died, and I still remember this patient because of his age and sudden death.⁵⁹

⁵⁹ Personal conversation with Mi Cho, in Mae Sot, April 2011.

Not all the people in the camp had malaria before because some of them were from plains in far regions not from the mountainous regions near the border. Those who were not immune to malaria were vulnerable, especially pregnant women and small children. Malaria during pregnancy is linked with low-birth weight of infants and stillbirths, miscarriages, and even death for pregnant women. Pregnancy requires more oxygen than normal time for women, however, if the blood cells are damaged by malaria parasites, the damaged cells cannot provide enough oxygen to the placenta and throughout woman's body. When infants are born premature, they have higher chance of mortality in the first year. Thus, anaemic pregnant woman become ill, in worse case, falls in comma if the parasite is *P. falciparum*. According to doctors at SMRU, it was very common that pregnant women showed up to the clinic for the first time because back in their villages in Burma, they did not have antenatal checkups and deliveries were still conducted with help of traditional midwives and close female family members.

Prior to his work commitment in Thailand, Dr. François Nosten, M.D., the Director of SMRU worked in Africa and Cambodia as an intern doctor at the French Médecins Sans Frontières (MSF). During his work in Cambodia, Dr. Nosten also worked for treating malaria cases, some of which had already shown drug-resistance to chloroquine and other first-line drugs. Dr. Nosten started working at MORU as a clinical medical doctor in Bangkok, where he and other researchers conducted pioneering research on combination drugs for drug-resistant *P.falciparum*. He conducted clinical research on malaria treatment by combining the mefloquine and artesunate (MAS), which was published in academic journals such as *Lancet*, the *British Journal of Clinical Pharmacology*, and *Transactions of Royal Society of Tropical Medicine and Hygiene* and highly regarded by malaria researchers every now and then.

Soon after he learned that there were high morbidity and mortality among pregnant women due to malaria infections, Dr. Nosten started conducting health service and clinical research on pregnant women in the camp. Yet little was known about the adverse effects of antimalarial drugs on the pregnant body and fetus at that time. Malaria in pregnancy was a rarely touched clinical field because of the potential risks and uncertainty. Moreover, clinical studies are normally conducted on healthy adults but not pregnant women. Being aware of the importance of early detection and proper treatment, Dr. Nosten started the weekly antenatal clinic and mandated blood screening of all the pregnant women attending the clinic by microscopic examinations.

At first, Dr. Nosten did not expect his pregnant patients to follow the clinic's weekly check up dutifully. While driving his Toyota 4WD to one of his clinics, Dr. Nosten once told me:

Pregnant women did follow our weekly antenatal check-up, which I was surprised. My daughter conducted research for her school assignment and she interviewed pregnant women in our antenatal clinics. One of the questions she asked in Karen language was why they came to the clinic. They said "because it's good." Meaning, it is good for their babies and also for them. They understood that it was important to check everything was going okay on their pregnancy. Back in their village, they did not have a physician and they had to deliver at home by traditional birth attendants. If they come to SMRU, they can see baby images in the screen with ultrasound, and the ultrasound room was quiet. Now the room is air-conditioned to avoid bugs, so it is cool and they can sleep while nurses examine their abdomen.⁶⁰

At the same time, Dr. Nosten and MORU's co-clinical team started clinical studies of malaria drugs on pregnancy of Karen migrant population. In his reply to an interviewer's question about his main studies, he answered: "A big bulk of the work has [done in the last thirty years at SMRU] also been on maternal and child health because of the very high

⁶⁰ Interview with Paw Eh Mu, April 9, 2012.

mortality and morbidity in pregnancy. We've concentrated on delivering safe services for safe deliveries for the pregnant woman but also we've done a lot of studies on the treatment of malaria, which is particularly bad in pregnancy.”⁶¹

As history has proven, the SMRU's health intervention for malaria on pregnancy was successful, and it was recognized not only by international malaria research communities but also global health collaborators, such as the European Union, World Health Organization, and later, even the Bill and Melinda Gates Foundation. Over time, the SMRU developed from its first humble bamboo-made malaria clinic in the refugee camp to a research unit that has four more additional field clinics that equipped with the main lab, OPD and IPD wards, prenatal and antenatal clinics, neonatal care unit, ultrasound room in Karen border villages in Thailand. Every morning the clinics' Toyota vans and pickup trucks bring the staff and medical equipment to the border clinics. Although it is not so often, when patients need further care due to emergency and complications, the SMRU takes patients from their clinics to the only Thai government hospital in Mae Sot town to administer the patients. However, because the cost is on SMRU not the patients, this is often avoided as much as possible.

3. Medical Staff Lives at Stake

Seeing and treating patients in the political conflict areas and war zones often endangers the lives of international medical practitioners as well as local staff. This also applies to SMRU clinics where medical staff need to travel to remote areas where patients come to seek care. They put their lives at risk involuntarily not only in times of political instability, but also in everyday life even in a town. For example, I witnessed many vehicle

⁶¹ Interview of Dr. François Nosten, “Between Research and Humanitarian” in the interview on MORU website, accessible from this link: <http://www.tropicalmedicine.ox.ac.uk/francois-nosten-between-research-and-humanitarian>.

accidents in and around Mae Sot town during my fieldwork, one of which I was involved. Another SMRU international worker was biking on a street nearby the SMRU main office and was attacked by stray dogs.

When the SMRU started as a field clinic in a refugee camp, the clinic became a target of attacks by Burmese soldiers and the Democratic Karen Buddhist Army (DKBA), which split from Karen National Union (KNU) along with Burmese. The SMRU staff told me stories about how the clinic survived being targeted by the violence. One of the earliest Karen staff who worked with Dr. Nosten, Mi Cho, shared with me a powerful story about the establishment of the SMRU as a field clinic in the refugee camp. In that moment, I realized that the SMRU was more than just a research clinic, but was akin to a big family corporation in which all employees strive for a successful operation.

Mi Cho started working at the SMRU as a lab technician along with Dr. Francois Nosten, a French physician, and another young Karen woman, who later became Dr. Nosten's wife, in 1986. Mi Cho was one of the earliest Karen staff and currently occupies a top administrator position at the SMRU. One night when everyone at the SMRU had already gone to sleep, Mi Cho heard gunshots. She got up and tried to figure out where the shooter was. When she heard the next gunshot, Dr. Nosten came down from his bunk and told Mi Cho to quickly escape from the clinic and hide. They thought that the Democratic Karen Buddhist Army (DKBA), which was backed up by the Burmese army, came to attack the Shoklo refugee camp in search of hidden Karen National Union (KNU) soldiers. Dr. Nosten told Mi Cho to follow him but she suddenly realized that her friend left her baby with her husband, who drank heavily that night. Thus, Mi Cho ran to a different direction from Dr. Nosten to search for the baby. At their place, the baby's father had fallen asleep from

drinking and did not wake up, so she picked up the baby and ran into the bush to hide. It was completely dark outside without moonlight. They remained still and silent until the firing stopped. Finally, they evacuated themselves when Mi Cho's brother came to find them and escort them to a place where all other the SMRU staff and patients were hiding.

When they all went back to the SMRU clinic, they found that the clinic lights were on and things were scattered on the ground. It was clear that soldiers came to the clinic to search for valuable materials. Things were stolen from the clinic, such as a radio, a favorite khaki jacket owned by Dr. Nosten, and medicinal supplies including pharmaceutical drugs. Prior to this, the DKBA⁶² announced through radio that whoever intervenes with their activities, whether it was international persons or Karen, would be threatened. DKBA made it clear that international NGOs and institutions that were saving Karen refugees would be targeted, and the SMRU activities were already well-known to them.

After this incident, the Shoklo camp was attacked by the rebel army several more times. The international border between Thailand and Burma and the Thai Border Patrol Police was supposed to protect political refugees from Burma, but did not function as intended. Being afraid of the brutality and fierceness of Burmese soldiers, Thai soldiers and Border Patrol Police (BPP) often let them cross the border to sneak into Thailand and attack the camp.⁶³ The Thai government intended not to agitate the Burmese government, but to show diplomacy while offering a minimum protection to the political refugees without

62 DKBA separated from Karen National Union (KNU) in the 1980s. DKBA were organized by mostly Buddhist Karen who felt unfair treatment within KNU, whose top commanders were mostly Christian Karen. Thus, DKBA allied with the Burmese army and together they fought against KNU, the same ethnic Karen group.

63 The Secretary General of Karen National Union (KNU) was assassinated in 2008 in his house in Mae Sot, this mysterious murder case was not seriously investigated by the Thai police, suspected that the gunmen were already ran away to Burma. This case was not resolved yet and the suspects were not found yet.

harming their reputation internationally.

Deep bonds and trust were visible in many aspects of relationships within the SMRU from the outsider's view. This creates the atmosphere of loyalty and comfort among the employees from the top administrations through the base of the work pyramid, such as janitors and drivers. In a sense, it seemed that the sentiment and shared memories of extreme experiences influenced some old staff to remain in the unit and remain loyal to the charismatic French Director, Dr. Nosten, whose medical research unit resembles a family-owned corporation. Perhaps it is because of this uncertainty and insecurity regarding their continuation of care in political conflict zones that international doctors and local Karen staff established their quasi-family bond. In other words, without the experience of the battles and military attacks, or deep sympathy and dedication by those who survived, outsiders such as international doctors and temporary researchers like myself, would never be able to feel a part of the family-like research institution. The hardships shared among the SMRU staff directly and indirectly contributed to enhance the meaning of humanitarian health interventions. Often the relationship between the SMRU doctors and staff at the research unit and clinical space resembled a guardian-child relationship. The presence of international doctors and researchers reminded local Karen staff that the international community cared about them not only because of emergence of drug-resistant malaria, but also because of their political vulnerability.

The SMRU collaborates with both local and international institutions for clinical practices and pharmaceutical studies. MORU refers to Mahidol Oxford Tropical Medicine Research Unit, which was established in 1979 to develop effective diagnostic and treatment modalities for malaria and other neglected infectious diseases, such as typhus, tuberculosis,

and leptospirosis. The SMRU is attached to the Mahidol University's hospital in Bangkok which provides scientific, administrative, and logistical support. The unit office provides the logistical support and laboratory tests. MORU is supported by the Wellcome Trust, the British-based science research foundation which provides funding and technological support to research institutions that conduct pioneering medical and pharmaceutical studies.

Dr. Nosten and other international doctors conducted clinical studies on pregnant women who had been diagnosed with malaria and published the treatment results in international academic journals. This internationalizing of their clinical findings earned the SMRU and MORU researchers global fame in the malaria research field. However, adverse effects, such as treatment failure, unexpected outcomes, and other negative facts were missing from their published articles.

The parasite intervention approach done by German microbiologist Robert Koch is very similar to the SMRU's health interventions. His germ control approach in German New Guinea relied on biomedical technologies and pharmaceuticals by periodic testing and treatment of all suspected malaria cases by drugs. In several interviews published in the main online streams, Dr. Nosten described that their institution's malaria intervention strategies took two important approaches: providing healthcare to the people and conducting clinical research. In an interview on the Wellcome Trust and MORU's website, he appeared to emphasize the importance of combining methods as the effective malaria intervention strategy:

It is quite important because we can translate the result of the research directly into practice; for the people it is beneficial and for the researchers it is rewarding. Combining research and healthcare in this research unit has proven to be a very good synergy between the two activities.⁶⁴

⁶⁴ MORU interview, Dr. François Nosten, "Between research and humanitarian."

Whenever he was asked in interviews, Dr. Nosten stressed the importance of the combination of health services and research. That way the practitioners follow and update the efficacy of their treatment, which they believe would translate into improved treatments for patients and changes in clinical practices. This strategy shows a practical side of the SMRU as a research institute that provides the most updated treatments sensitive to drug resistant parasites and monitoring any signs of epidemiological alarms. This is their strongest contributions to the research population of migrants along the border. In this regard, the SMRU's intervention situation is different from other public health sectors and small local clinics that struggle with a lack of resources highlighted in previous medical anthropological studies. Public health sectors constantly need to look for channels to receive global health funding resources, which tend to be poured into international nongovernmental organizations (NGOs) or multilateral research cooperation (Pfeiffer 2013; Street 2014).

A malaria guideline made by the SMRU came to be used not only by local NGO clinics and medical aid groups along the Thai-Burma border, but also other parts of the world. Doctors at the SMRU proudly tell outside interviewers that they lead cutting-edge clinical research on malaria and provide essential data to “combat” malaria. Conducting research on untouched areas of the epidemiology of malaria, publishing articles of clinical analyzes on the drug resistant cases, raising the alarm on the risk of malaria on maternity, and publicizing their clinical findings and sending messages through the international public media made the SMRU and their works valuable to the global health population. At the same time, the SMRU and MORU successfully depict malaria along the Thai-Burma border as a potentially threatening infectious disease to the world population, due to the high drug

resistance in malaria parasites. The image of migrants and refugees also provided an urgent message to global health collaborators that the controlling the disease means how to keep the highly mobile population under the epidemiological surveillance.

Every morning, the SMRU clinic truck and vans delivered supplies and logbooks to five SMRU clinics in Thailand along the border. These clinic vehicles are fully loaded with staff and supplies. The supplies include packages of mosquito nets, boxes of rapid malaria test kits, various kinds of pharmaceutical packages and bottles filled with nutrition supplements, disposable syringes and needles, IV packs and catheters, solution water bottles, boxes of body thermometers, and oxygen tanks for adult and child patients on the clinic truck. While staff were loading supplies and oxygen tanks, doctors were still exchanging information while checking their patients' data from the main lab until the last minute. The clinic truck left the main office in Mae Sot at eight o'clock sharp and drove on the highway to agricultural Thai villages. Within forty-five minutes, we arrived at the SMRU's nearest clinic.

The SMRU's Wang Pa clinic stood on top of the river bank hill in Wang Pa village. The clinic's entrance had a banner, which included emblems of the United Nations, the European Union, their academic research cooperators, and a mosquito symbol. On the other side of the clinic front, a large drawing of the Thai king, along with the Thai national flag, was raised high up. Entering the clinic, there was a large open-air space under the steel roof. At the clinic, only a delivery room, an ultrasound room, and the laboratory were air-conditioned; the rest was open-air rooms. Walls and doors inside of the clinic were mostly made of wood, which were constructed on the cement floor. A ventilator was circulating the air in the waiting room, but it did not help to relieve the heat from outside. After the

reception and registration booths at the entrance, there was an OPD, which had a blood examination desk, a medical consultation room that was made with thin walls and pieces of curtain that separated the waiting space and consultation space. A pharmacy dispensary, laboratory, clinical study room, and vaccination room were facing a spacious waiting area. The IPD had two inpatient rooms for hospitalized patients both adults and children, an emergency room, a doctor and medics' on-call room, and a small operation room. Aside from the main clinic space, there was a data entry room, training rooms for the staff, a staff boarding house, and a dining space and kitchen behind the clinic scene.

4. Patient-Practitioner Interactions at SMRU Clinics

The identity of patients is not only biologically constructed, but also socially and culturally influenced. Through my ethnographic observations, I found that as a consumer of biomedical properties, patients are expected to play a suffering role that is passive, distant, and sometimes ignorant in medical science knowledge. The hospital setting associated with the biomedical model has set this role to the patient-doctor interactions. In this section, I examine how patient images are shaped through the medical process.

The role of the patient is constructed through interactions with practitioners as soon as they arrive at the clinical setting. A Burmese doctor who was in charge of Wang Pa clinic told me that most of patients who attended the clinic tried to minimize their interactions with clinic staff, even though a majority of the staff were ethnic Karen who spoke Karen language. This tendency towards shy or humble behavior among Karen patients was occasionally contradicted by Karen patients who enjoyed interacting with the staff. But, openness to the clinic staff among patients was not common, at least not at the larger the SMRU-Wang Pa clinic.

At the SMRU clinics, the Karen patients were almost always silent and submissive in front of the medical staff, unless they had developed a relationship with the practitioners based on previous visits or they had known each other because they came from the same village. Some local Karen staff occasionally teased patients in a friendly manner, especially in the small-scale SMRU clinics. In these cases, patients came to know the particular staff and also argued with or gave excuses for not coming to see them earlier. However, if patients were new or they did not have much experience at the SMRU clinics in the past, they avoided any eye contact with the staff. From the outside, I thought at first that the patient's submissive, compliant, and distant behavior showed them as vulnerable patients and subjected them to scrutiny and blaming by the SMRU health staff. One female Karen practitioner talked to me about some patients who were "naughty."

Whenever I have naughty patients, I tell them straightforward that if they want to see their families again, they must follow what the staff tells them, otherwise they will never reach to their village again. About two years ago, we saw *yaa-chud* (cocktail drugs sold at over the counter) were sold in the village. We always asked patients if they had taken some medications before having blood tests at our clinic. Almost all the patients said no, but I knew they lied. Some patients, I saw them purchasing medicines from shops in our village with my eyes.⁶⁵

These patients were called "naughty" and needed to be scolded for their misbehavior, according to the Karen health practitioner who examines the blood specimen. The same staff also explained that some patients were still afraid to have their blood drawn every time they came to the clinic. Patients who were not presenting any symptoms, such as pregnant women at antenatal check-ups, showed discomfort when the staff draw blood, saying that it was painful and not pleasant. The staff described her conversation with pregnant women to me:

The patient asked, "Why do you [clinic staff] take my blood every time I came to the clinic?" I explained to her, "It is for testing. From now on you need to come to the clinic once every two weeks." If she doesn't come, we'll yell at her. "You must know

⁶⁵ Interview with Ms. T, a female Karen staff at SMRU-MRC clinic, April 23, 2011.

it is not for our own benefit but for your health. If you don't come for regular maternal check ups, it is better not to come from the beginning.” When we said that they had to come, they said “yes yes, *tharamu*” (female practitioner) and smile, but they don't show up.⁶⁶

When the sequence of the staff's interactions is examined carefully, it is clear that the comments she made were not meant to blame patients or frame them as ignorant, but to warn them of the risks they faced if they did not follow the staff's orders. This Karen female staff told me that she had to yell at patients often, because malaria patients often presented themselves to the clinic too late or they promised to come to follow-ups but they missed their visits. Although the staff comments about patients were harsh, I saw that these verbal exchanges between patients and practitioners happened when their relation was close enough to make such jokes. To prove this was as a way of communication between the practitioner and patients, patients still came to the clinic even though they knew they would be scolded by the practitioner.

Medical anthropologists have examined patient compliance and how it creates relationships between patients and clinicians at the biomedical setting (Hardon et al. 2002: Trostle 1998). Saethre and Stadler's study of the Warlpiri in the Northern Territory shows that noncompliance among the Warlpiri residents towards nurses is attributed to their experience of illness and misunderstanding between the two parties due to cultural, educational, and language differences (Saethre and Stadler 2009:774). Medical interactions often depict patients as noncompliant and passive subjects in the biomedical setting, where medical doctors position themselves hierarchically at the top.

One of the Burmese medical doctors at the SMRU shared a story of Karen patient behavior with me. According to him, it was difficult to get Karen patients to answer customer

⁶⁶ Same quote as the previous Karen staff.

satisfaction surveys about their clinic service. He explained to me, “We want to know how we can improve our service, and we ask patients if they have time to answer questions, but they just run away! They don’t want to stay at the clinic once they get medicines. They leave the clinic immediately.” When I asked why he thinks patients leave immediately, he gave me a simple answer, “Perhaps patients did not want to stay longer in the hospital.” However, when we recall this chapter’s first ethnographic example of a young father, who was relieved to stay in the SMRU-Wang Pa clinic with his two daughters with *P.falciparum*, it is also rational that for cases involving children, caretakers would want to stay overnight in the clinic if their circumstance allows them to do so. The fact that they receive not only free treatments, but also free meals regardless of whether they are patients or caretakers staying at SMRU clinic is significant, considering their relative poverty at home. Thus, if the medical staff asks for satisfaction survey to in-patients, then, they may have more responses rather than to ask out-patients. As such, patient-practitioner relationships at the SMRU clinics depend on the location of the clinic, length of patients’ usage of the clinic, patients’ further commitment to join clinical studies, and severity of cases.

5. *Lema* as Patient Record, Patienthood, and Biological Citizenship

At the SMRU clinics, first-time patients were registered at the front reception by the hospital clerk, and patients had to pay five baht (about fifteen cents) as a one-time fee. Each patient paid this initial fee to receive a *lema*, a thin pocket-sized notebook made from low-quality paper, and perhaps 30 pages long. The front and back covers had young attractive people’s figures. Patients carried the notebook every time they visited a SMRU clinic. A *lema* carries the personal identification information of the patient: name, clinic code number, age, gender, and physical address. However, many undocumented Karen migrants who

presented as patients did not have permanent addresses, and sometimes their village location was only a temporary location. Thus, addresses on *lema* were not accurate. Several Karen clinical trial nurses told me that it was hard to track patients down in their villages. A Burmese doctor also commented on fake or erroneous village information:

They provided certain village names, and when they did not come back to the clinic for follow-up, we had to send our staff to the village in search of the patients. But, we often found that they did provide us accurate village names. It becomes a problem when we need to get to the patient immediately. One time, a medic noticed that he prescribed the wrong dosage for a specific medication. As soon as we noticed, we sent our staff to the village, but the staff was told that there was no such person!⁶⁷ All the medical records and patient information were written in English at the SMRU

clinics. When patients presented themselves at the clinic, the staff measured their body weight, blood pressure, body temperature. Then, after taking the vitals, staff asked questions regarding the first onset of symptoms, and whether or not they have taken any *yaa-chud* before coming to the SMRU clinics. When lab test results come back, staff add the information in the *lema* and referred the patient to a medic for consultation.

The patient records in the *lema* including home medication, lab test results, diagnosis, and treatment, were now shared with the clinic records, which were numerically categorized and put into the database as a monthly report to external funding organizations, such as Global Fund, and the local Thailand MOPH office handling vector-borne diseases. The information needs to be accessible to any health practitioners in the SMRU clinics as well as outside organizations and the government. Therefore, every information on the *lema* is written in English. However, many Karen cannot read English, and thus, cannot access the *lema*'s contents. Nevertheless, for some patients who have been consulting the SMRU practitioners for long time, the *lema* has an important value to prove their patient identity and

⁶⁷ Interview with Dr. A at the SMRU Wang Pa Clinic in December 2012.

provide a personal history of the body.



Figure 4.3 A patient with her *lema* (pink booklet on table)

One of the patients, a female Pwo Karen patient who came to the clinic for her follow-up clinical study, presented her thick *lema* and said: “This is my five-years of *lema*. The clinic staff here does good by me. I always come to the scheduled follow-up because I am afraid they might lose my name from their record if I don’t come.”⁶⁸ The patient had several malaria episodes in the past; and when I met her, she was participating in a clinical study on malaria drugs at the SMRU.

68 A 57-year-old female Karen patient at SMRU-Wang Pa clinic, November 15, 2012.

What was clear from this female patient's narrative is that for some patients at the SMRU, the *lema* manifests their personal history of suffering and confirms their existence in the borderland. Even though they cannot read the year, date, and what health problems they had, this personal health record carries their memories of each illness episode, where they worked and traveled, who was with them at that time, what life conditions they had, how their body suffered, how they reached to the clinic, how long it took to recover, and who was involved in this process. When I pointed out her previous malaria episode from her *lema*, she nodded and described the situation:

In October, I arrived here at SMRU clinic. It was two days after I started having body-aches, shivering, and ringing in the ears. I was unconscious when male workers from the rubber plantation I worked at carried me into KouKou hospital (just across the river in Burma side). I dreamt that I reached the Mae Sot Hospital (a modern Thai district hospital in the Tak Province). For fourteen days, I was required to come to the clinic to take medicine. At day twenty, I really wanted to clear the malaria 'germs' from my body because I got malaria three times this past year.

It was clear that even though patients could not read what was written on their record, the *lema* symbolized their bodily experience of suffering. However, *lema* does not carry any official legal status or documentation relevant to their political status in the borderland. It is only used as a patient's personal medical record within the SMRU clinics. For one time-clinic users, patients often lose the *lema*, and replace it with a new one. However, for those who were enrolled in clinical studies, *lema* clearly indicates their participation dates, length, lab results, monetary compensation, and other biomedical history. From my observations of the ways in which patients handled their *lema*, I claim that the patient record is a proof of being a compliant patient to the SMRU. It also embodies the patient's identity, which emerges from their attending therapeutic opportunities at the clinic. By letting patients carry and keep their own *lema*, a medical record, the SMRU successfully transformed migrants who presented at the clinics as patients, who were responsible for carrying their patient

identity.

6. Social Relationship within the SMRU Clinics

The clinic ethnography elucidates how biomedicine is understood, contested, and negotiated between global health policy makers, international research doctors, and local practitioners. Anthropological works on biomedical spaces have discussed various relationships in the process of mediating health interventions including: knowledge, power, state, science and technology, pharmaceutical governance, and ethics. Furthermore, clinical ethnographies have found that biomedical practices at clinics and hospitals are at stake for various social actors, such as practitioners, patients, policy makers, and pharmaceutical manufacturers (Delvecchio Good 1995; van der Geest and Finkler 2004). In this sense, the diversity in nationalities and ethnicities among the SMRU staff reveals that biomedical practices formed a cosmopolitan moral grounding that guided interpersonal and professional relationships rather than an individual's personal background.

Alice Street (2014)'s ethnography in the Madang clinic in Papua New Guinea shows that a hospital space and biomedical technologies are merely universal in resource-deprived countries. In addition, it is widely recognized that clinical and laboratory practices are also contextual (Moerman 1998; van der Geest 2005). Doctors and researchers negotiate with local politicians as well as international organizations to bring these resources, yet these new investments often lose their efficacy due to a lack of maintenance and trained human resources. Street (2014) insists that the success of biomedical interventions largely relies on political and social conditions, rather than applications of biotechnologies alone.

At the research clinics, biomedicalization includes administrative processes in which patient data is coded and registered for analysis. During the clinical process, data and

information are kept and analyzed numerically by computerized technologies, while disease cases are carefully investigated in diagnostic tests. Data and samples collected by practitioners are separated from individual patients and they are reframed as clinically derived data that to the research doctors at the clinics. Annemarie Mol and Marc Berg (1998) raise an intriguing question about relationships between social relations and medicine. Like other anthropologists who have investigated the study of science, they assert that social relations do not necessarily precede medicine, but they can be found inside of medicine (Mol and Berg 1998: 11). Thus, medicine allows people to create new social relations, values, morals, and healing practices. In other words, biomedicine is not a static entity, nor is it performed without changes within science and technology fields. Rather, it entails social and cultural meanings and realities, as many social scientists have suggested.

7. Conclusion

The SMRU clinical space is expected to neutralize such individual variables and cultural logics under the universalities of natural science (Kleinman 1995). However, cultural identities impact how patients and practitioners interact each other and the ways in which social relationships within clinical space are shaped. Medical doctors at the SMRU are highly motivated to work in this demanding circumstance where they must deal with patients who are unfamiliar with biomedical terminology and clinical practices, thus patients would avoid unnecessary contact or verbal communications with the doctors. International doctors at the SMRU are also expected to conduct clinical studies within the clinics and publish articles for reputable clinical journals. What makes the SMRU famous in international malaria research world is their rigorous scientific research pursuit environment, and conducting cutting-edge research related to malaria in small clinics in the borderland in Southeast Asia.

I also argue that the SMRU doctors' humanitarian motives should not be undervalued. Although individual medical doctors at the SMRU did not mention a humanitarian reason as their work motivation, they were well aware of the humanitarian image and moral discourses that were projected by the media onto their clinical practices. Noting that the borderland is an ethnic conflict zone, one can say that the SMRU international doctors, especially those who originally came from Euro-American countries, work under limited life options compared to their fellow doctors in their countries in many ways, including salary, access to resources, children's education, safe and materially comfortable environment, to list a few. Thus, their dedications to their scientific pursuit is equally important as their compassion to their patients under such circumstances.

Clinical practices are created through synergic negotiations between patients and practitioners, as well as their social experiences at clinics. At the SMRU clinics, this patient-practitioner interaction was affected by various factors. First, I showed a few Karen patient cases in which they exhibited compliance to the SMRU clinic staff and their clinical interventions, while other Karen patients showed almost the opposite behaviors, such as avoidance and noncompliance to the clinic. The different behaviors among the patients can be partially explained by patients' given individual circumstances, rather than particular practitioners' behaviors to patients. Patients who refused to stay overnight in the clinic explained to me that they were the main caretakers in their family, thus, even though they had severe malaria, they went home. In other cases, patients participating in the clinical study complained that the clinic staff took too much blood or the medicines were too strong and made them feel dizzy. However, in general, Karen patients seemed to appreciate that the SMRU clinic staff check their blood with microscopy, and the SMRU drugs given to patients

were genuine and strong. It should be noted that although Karen clinic staff complained that patients were not compliant with pharmaceuticals, Karen patients believed that antimalarial drugs from the SMRU were effective, and thus they valued them. Undocumented Karen migrants would still take *yaa-chud*, the cocktail pharmaceutical drugs from the corner shops in Burma, before coming to SMRU clinics because of unavoidable circumstances such as working in the deep forest or lack of transportation fees to the SMRU clinics, etc.

From the opposite position, the clinics and the staff hope to improve their services, thus, they show frustration at patients' noncompliance to the clinic staff. It seemed that while Burmese medical doctors were rather amused at encountering with some Karen patients' avoidance behavior, local Karen clinic staff showed more frustration at Karen patients than Burmese doctors because they were the ones who had to convey the clinic's order and ask for compliance. Also, Karen local staff were the ones who had to go find malaria patients in their villages in Burma in cases when the patients did not come back for follow-up visits.

CHAPTER FIVE

MAKING SENSE OF MALARIA IN THE BIOMEDICAL SPACE

This chapter focuses on both biomedical practices and narratives of biomedical interventions for malaria at the SMRU clinics. I focus on both biomedical practice and narratives through participant-observations and interviews, in order to examine how patients interpret biomedical interventions. Medical anthropologists have been using narratives to conceptualize both individual and collective bodily experiences of illness. Narratives provide us a view of how individuals see their bodies and illness, through which people reconstruct their experiences of illness and their surrounding world (Garro and Mattingly 2000; Das 1997; Kleinman 1995). Illness narratives indicates not only physiological states, but also provides cultural interpretations of lived experiences. Such interpretations include people's morals and ethics, metaphors, suffering, healing process, and inequality (Kleinman 1980; Mattingly 2010; Martin 1990; Lock 1998; Ochs and Capps 1996; Saethre and Stadler 2010; Sontag 1989). Capps and Ochs (1996) have claimed that the act of telling stories requires people to choose certain episodes out of one's fragmented memories and construct these experiences into a story. Thus, telling stories create the representation of one's experience and build understandings of past, present, and future sequences.

I aim to investigate how biomedical interventions at the SMRU have impacted the perceptions of malaria and lived experiences of those suffering from malaria. Malaria is considered a biosocial illness among the Karen along the border, rather than simply as an infectious disease in biomedical and epidemiological terms. Drawing upon patient narratives, I describe how Karen patients at SMRU clinics understand and deal with their health problems, and how the biomedical care, practices, and patient-practitioner interactions construct and reconstruct their notions of the illness and the body. First, I analyze the Karen

traditional understandings of illness and the body from previous ethnographic studies. Second, I review Karen traditional beliefs on illness, body, and investigate how the Karen undocumented migrants perceive malaria in the Thai-Burma borderland and their body through analyzing their illness narratives. Third, by participant observation as well as interviews of individual Karen migrants at and around the SMRU clinics, I examine their health-seeking behaviors for malaria. Lastly, I look into the illness narratives and health-seeking behaviors to contextualize malaria within their worldviews of the body and illness.

To be clear, my intention in this chapter is not to provide Karen cultural models of fever and illness. Rather, my intention is to reconstruct the ways of undocumented Karen migrant patients view their malaria experiences in the Thai-Burma borderland. By analyzing their narratives, we are able to see their sociocultural, political, economic, and environmental situations, and how they sought care at the time of experiencing illness in given situations. Farmer (1992; 1996) argued that, instead of seeing it as caused by the structural violence and their inequality in health, health practitioners and international aid agencies regard patients' health problems as their responsibility, and attributed sickness to the people's lack of morality and noncompliance to biomedical practitioners. Thus, I argue that cultural explanations of an illness requires a careful examination, and to not be used as a source of blaming people. Blaming models only functions to elevate the vulnerability of the local populations and to provide public discourses of cultural politics.

1. Karen Traditional Views on Illness and Spirituality

Before I discuss Karen patients' understanding of malaria, I summarize some of the Karen beliefs and health practices that have been studied by other ethnographers. Both in lowland and hills, the Karen have shown that they believe in ancestral spirits and animism

(Sirisai 1993). The Karen believe in supernatural causes of illnesses and practice treatments using herbal remedies and household materials, such as salt and ashes, or seek consultation from spiritual specialists. A pioneering Karen ethnography written by Harry Marshall (1920) described that the Sgaw Karen in Burma believed in the existence of a supernatural power (“k’sa”) or divinity in the natural beings and environment, and that they would bring prosperity or cause illness and unexpected events to the people (Marshall 1920: 225). One of the roles of elder family member or of religious specialists is to conduct offering rituals to these supernatural powers. These traditional village leaders are called “*he kho*” in the Sgaw Karen language. Marshall described that the motivation of the Karen offering was characterized by fear of the powers (ibid.: 234). Studying the traditional Karen rituals in northern Thailand, Buadaeng claimed that the Karen adapted to changes in their social, political, ecological, and economic environment.

Larcharajna (1983) described that spirituality and customs among the Pwo Karen in remote western Thailand still played an important role in agricultural and annual village ceremonies. The animistic beliefs and customs are well integrated into Buddhism without much conflict among the Karen. Other studies also reported that various Karen groups have adopted beliefs and religious practices of world religions such as Buddhism and Christianity into their spiritual practices more or less easily (Iijima 1971). Conducting extensive fieldwork in Karen villages in northern Thailand, Hayami (2004) and other scholars have described the *au xae* ritual as the centrality of Karen spiritual aspects and cosmologies.

Michael Gravers (2001) argued that anthropologists should be cautious about idealized or essentialized images of the Karen. Gravers further points out the complexity among the Karen groups in religious practices, identity politics, and their strategies of

presenting Karen ethnic identity. If we keep the discussion of the Karen as a peripheral and marginalized people, we will miss their segmented process of integration into modernism and categorize them as static and primordial hill tribes. This static, essentialized perspective has received criticism from ethnic minority groups (Gravers 2001:155).

In this dissertation, my focus was not on the village setting, but the clinical setting. Although I do not go into the discussions of Karen spiritual rituals for health-seeking, I acknowledge that even Karen medical staff who had been practicing medicine at the SMRU clinics told me that people still practiced healing rituals as home remedies for fever, particularly for children.

One senior medic who diagnosed and prescribed medicines at one of the SMRU clinics explained to me that in remote Karen villages in the mountain, people still believed in spirits and thought that these spirits would live in sacred places in the mountains. Such sacred areas are prohibited to approach without giving offerings. He described a story of some villagers who crossed the prohibited area to go hunting and logging in the mountains returned with high fevers. Thus, villagers suspected that their acts in those sacred places might have angered spirits. According to the medic, malaria was not considered a disease by the villagers back then. Thus, if people developed high fevers as a result of the disease, they most likely consulted religious specialists who made offerings to the spirits in the nature and performed rituals to cease the stress caused by the spirits (Interview with Mr. W, August 12, 2012).

A lab technician who worked at the same SMRU clinic assured me that his parents were still conducting such healing rituals in his home village in Burma. I also heard from a SMRU staff member at the SMRU-Mae La camp that one of the medics at the clinic was often requested by Karen refugees to conduct healing rituals that were not involved with

biomedicine outside of the SMRU clinic. In his case, he worked within a biomedical framework at the clinic and a framework guided by Karen traditional rituals at his house in the refugee camp. Unfortunately, this medic left the SMRU and Mae La camp to go back to Burma before I could conduct an interview with him; thus, I could not ask him details of his healing practices and how people came to learn that he could conduct such rituals.

The following three episodes of Karen medics and a lab technician at the SMRU show that even in a biomedical setting, Karen traditional beliefs in spirits and rituals were not completely rejected by medical practitioners. Sirisai (1993) claimed that the concepts of time and location of spirits are related to understandings of malaria among the Karen in the Thai-Burma border. In fact, the concepts of time and location become important factors to understand the complexity and fluidity within illness narratives that are associated with malaria among Karen migrant patients. I will explore how the Karen patients' understandings of malaria and the body have been changed or not changed by the biomedical interventions at SMRU in the next chapter.

2. Illness Narratives and Malaria Suffering among the Undocumented Karen Migrants

Karen patients do not always know that they are infected with malaria through mosquito bites because they moved from non-malarial places in Central Eastern Burma to malarial place in the borderland. They came to the borderland without knowing that malaria is endemic. Some had never heard about the disease (Personal conversation with Dr. Francois Nosten in Mae Sot, March 11, 2011).

Dr. Nosten's narrative gives us a glimpse into why some Karen migrant patients at the SMRU do not seem to know about malaria even though they came to seek treatment for their fever at malaria research clinics. People who have spent some time in the Thai-Burma

borderland have experienced malaria several times. However, despite their sequential malaria experiences, almost half of the patients with whom I conducted interviews (71 individuals in total) did not give me a clear answer (bite by malaria infected mosquito) regarding how they had contracted malaria parasites. Moreover, approximately half of all the patients I interviewed provided pluralistic ideas of malaria causality. This is how I learned that a quantitative survey method on Karen understandings of malaria may not provide a clear picture of the local perceptions of malaria symptoms and the complexity of malaria causality. This chapter begins with several illness accounts of undocumented Karen migrant patients at SMRU clinics, and their understandings of the body and illness, particularly malaria.

Like many other hill minority groups in Thailand and Burma, the Karen traditionally have animistic beliefs and practices, with the spirituality of the Karen permeating every aspect of their life (Buadaeng 2007; Hayami 2004; Keyes 1994; Rev. Loo Shwe 2006). Sirisai pointed out that the Karen in northern Thailand recognize that there are 33 spirits called “*ke?la*” embedded in the body organs and they are the vital forces of the body (Sirisai 1993:129). It is believed that people become sick when the *ke?la* is attacked by evil spirits and leaves the body. Sirisai (1993) articulated the Karen cultural perceptions of malaria in which traditional healers rationalized the illness with regards to the specific times and locations. According to Sirisai’s study in a Karen village near where I conducted fieldwork, Karen understandings of malaria is caused by the attack of spirits which have inhabited certain places at certain times, generally close to water sites (ibid.:130). Having these explanations in mind, Sirisai’s explanation of the Karen’s close relation to ecological environment and its implication to their cultural perception of malaria provides a unique cultural ecological perspective.

However, what Sirisai did not mention in her short report is the fact that Karen people have an extensive lexicon to describe their bodily symptoms related to the imbalance of the internal body, cultural concepts of hot/cold, and the existence of air/wind in internal body, which are important to understand the perceptions of malaria. Previous studies on local perceptions of the body and illness were often examined within linguistic investigation and ethnomedical concepts of the body and illness/health. There are some analogies between linguistic explanations of illness causality or disease agent and cultural perceptions of body symptoms.

In the Karen terms, malaria is referred to as “malaria illness” and people relate the illness to mosquitos. Malaria illness is called *tanyaa-ghoo-kha* or *pajyo-kha* in Sgaw Karen, and *kijyo kha* in Pwo Karen. Mosquito is referred to *pajyo* in Sgaw Karen and *kijyo* in Pwo Karen, respectively. Thus, both *pajyo kha* and *kijyo kha* mean ‘mosquito infection.’ While the terms of *pajyo kha* and *kijyo kha* show that the symptoms are associated with mosquito, the term *tanyaa-ghoo-kha* is somewhat ambivalent, as it implies other infectious diseases that also cause fever. For example, Sgaw Karen patients used *tanyaa-ghoo-kha* to describe various symptoms look like malaria, such as common flu (*To’kwe*⁶⁹), and they viewed *tanyaa-ghoo-kha* as caused by various factors, including mosquito. Such factors include: imbalance of the body in contacting with nature (i.e., cold water, wind, hot sun, fire frame), one’s past activities at particular time and space, and one’s feeling of belonging to particular ethnicity, citizenship, and place.

The following malaria narrative is a Karen patient’s experience of the illness. The

69 Some patients used *To’kwe* to refer to dengue fever. One female Sgaw Karen medical staff at SMRU said that because there was no Karen term to describe dengue fever, which was an emerging disease in the area, Karen migrants used *To’kwe* to refer to both common flu and dengue fever.

patient's illness account articulates her bodily experience as abnormal pain of body parts, which were objectified through pain. 'Tsa Mu' was a 46-year-old female migrant patient who had had fifteen pregnancies but only seven survived. My research assistant asked about her reason of coming to the clinic.

I have been having a fever for four days. The clinic staff said it was not the severe one. I think my fever has something to do with my heart or my liver. My heart is in pain, very painful (touching her chest by her hand). I took medicine, but I am still in pain. I cannot breathe. My headache started at the end of the Songkran festival (around mid-April in 2012). I had a headache [pointed to her head] but no fever. I have burning stomach pains after eating and drinking water and it affected my heart. Now I am taking medicine to treat burning pain [squeezed her eyes tightly]. *Tharamu* (female practitioner) examined me. I told her that I had trouble breathing and I felt burning heart pains. I cannot sleep. The first two days I took malarial medicine in the hospital, and the medicine made me feel dizzy. I don't want to open my eyes even at this moment. I want to close my eyes but I cannot sleep even I close my eyes. Also, I don't feel hungry so I am chewing betel nut, because I want to vomit [pause]. A while ago, I started feeling heart pain and *tharamu* asked me if I was breathing okay. No! I said. I felt my heart was beating fast, like my heart was jumping and I felt exhausted.⁷⁰

Tsa Mu did not tell us that she was diagnosed malaria positive at first. Instead, she detailed her experiences of various bodily discomforts. From this account, it was clear that the illness overwhelmed her with its symptoms. Her following story further suggested that the illness caused her disengagement in social interactions with people around her.

As soon as I arrived home from work in the *khgu* (rice field), I lay on my bed because I did not have strength to talk to people even when they were talking to me. I did not respond and remained silent. First it (pain) started with my heart. It was a piercing pain here and there [moved her finger from heart to limbs]. When I had malaria before, I used to feel pain in my hands and legs, and test results showed that it was malaria. [pause] I never had malaria when I was at Ler Le village. (Researcher: "In total, how many times did you have malaria after you came to Boh Deh village?") Plenty! I also have had the severe one; how many times, I don't remember. But I keep all *lemas* (her personal medical record books) at home. I have four *lemas* completely full! Including this one, altogether five! The first year I came here, I remember that, hmm... I rested only one month and malaria came back again, and after that it was

70 Interview with Tsa Mu, a female Sgaw Karen patient at WP clinic, April 24, 2012.

constant. This time I got malaria and the malaria illness (*Tanyaa-ghoo-kha*) is different. In the past, I had a severe headache. It was very painful like something pinching my brain and burning pain in my eyes. This time, my heart is in pain and I am still not feeling well. I take medicine and it helps little bit, but the pain does not go away... It's like, when you have malaria, you cannot live peacefully, you do not feel well, you feel your heart and liver are burning, you feel really really unwell! Even though you want to vomit, nothing comes out. You don't have an appetite... When you have fever, you cannot sleep. I rolled on the floor and did not let anyone sleep in the same space, because I felt feverish and wanted to bathe again and again.

Tsa Mu articulated her illness history by referencing her accumulating patient record books, which listed her past malaria episodes and medics' diagnoses. By collecting memories of malaria episode(s) within her domestic context and recalling various symptoms by internalizing pains into the mind and body parts, her illness accounts described how malaria transformed the way she viewed her body suffering. Through her accounts of various pains on her body, she demonstrated that her body was in crisis.

To discuss the bodily pain, I attempt to utilize phenomenological approaches. Thomas Csordas argued that whether the pain really exists or not in the mind was not a proper question, because the pain experience is internalized in one's mind through the body (Csordas 1990; Jackson 2000). Tsa Mu's narratives contain her experiences of mind suffering ("when you have malaria, you cannot live peacefully") as well as physical pain. Her emotional accounts show that the illness equally burdened her body and mind. She described the accumulated *lema* as evidence of her lived experience and strongly sensed that she had been sick for a long time due to malaria (and possibly by other illnesses), as if her consequential malaria episodes were almost like chronic disease. The next section describes the multiplicity of understandings of malaria among undocumented Karen migrants.

Medical anthropologist Arthur Kleinman (1980) claimed that Chinese traditional doctors understood the human body and pathological changes were in a continuous process

of adaptation to the natural environment. Drawing on the Karen migrant patients' accounts on the malaria experience, I relate the Karen migrants' perceptions of the illness and their cosmic views of one's body and health to the environmental elements to Kleinman's cultural interpretive approach.

Kyaw Pyu was a 45-year-old, male Sgaw Karen patient, who had been living in Thee Kow Htoo village along the border for twelve years. He came to the WP clinic by himself around one o'clock in the afternoon when most out patients had already left the clinic. He was in a hurry, uncomfortably sitting on a chair alone in a spacious empty waiting area. I saw that his malaria rapid checker showed that he was positive with malaria *P. vivax*. Both of Kyaw Pyu's eyes had cataracts and were paralyzed. As I approached him with my notepad, he seemed a little nervous. I started asking what brought him to the clinic. After a few moments of hesitation, he started explaining to me that he came for a blood check because he was suspected of contracting malaria. He said:

Kyaw Pyu (KP): I came here for my *kotakichaa* (headache). I feel like *tanyaa-ghoo* (malaria infection), but not sure.

Asami (Asami): Did you have the same health problem before?

KP: Yes. I feel *taku?* (fever), and *tanoaa* (chill) on and off for long time. I feel like it has been more than ten years⁷¹. Now I also feel *takii* (body ache).

Asami: Do you know what caused your health problem?

KP: I feel like it is *tanyaa-ghoo kha* (I get malaria)

Asami: Do you know how people get *tanyaa-ghoo-ka*?

⁷¹Earlier, Kyaw Pyu described that he had the symptoms for seven or eight years and later he changed it to ten years. This changing numbers, giving approximate one's age are very common among the patients at the clinic. I think in this case, he was trying to stress the fact that he had been ill for such long time.

KP: I think it comes from *pajyo* (mosquito). If you get bites from *pajyo*, you get *ahka* (germ). It starts like this. There are various kinds of symptoms related to *tanyaa-ghoo kha*. Some get fever, headache, cold, shivering, like this, *dadadadada* [shook his body quickly]. Then we know it is *tanyaa-ghoo-kha*. There are two types in symptoms of *tanyaa-ghoo-kha*. One type is headache, fever, and another type is chill and shivering. Some feel heat deep inside of their eyes. Some others feel cold all the time.

Kyaw Pyu provided an extensive information of what symptoms he thought that were related to malaria. Clearly, he associated malaria with mosquito bites. However, from his answer, it was not clear, then how one could prevent malaria.

Asami: To avoid *tanyaa ghoo kha*, what do you do? How do you prevent getting sick by *tanyaa ghoo kha*?

KP: When I am at home and feel cold, I take one or two tablets of para (paracetamol) per day.

Asami: Is there any way you could avoid *tanyaa ghoo kha*?

Research Assistant: Now you have no malaria and you do not want to get it again, how do you prevent malaria?

KP: Now I do not come again because I already came regularly for follow up.

The conversation with Kyaw Pu shows that there were discrepancies between the researcher's intention and the informant's information. When I asked how to prevent malaria, Kyaw Pyu said that he would only take paracetamol, which is a typical pharmaceutical drug to relieve fever and pain available in Thailand and Burma. To clarify my question, my research assistant repeated the question by changing words. However, Kyaw Pyu did not directly answer the question. Thus, I asked him again how other people in his village knew if they had malaria.

His reply to my research assistant implied that he believed his participation in a

clinical study would protect him from future malaria infection. In fact, his answer was not pointless at all. At clinics, health practitioners explained to patients that the clinical studies were good for them because it would prevent recurrence of malaria. A nurse at one of the SMRU clinics told me:

I tell patients that I, too, have had malaria before. But after I participated in a study, I have never had malaria again. Whenever I have disobedient patients, I tell them directly, if you want to go back and see your family again, you must follow what the staff tells you otherwise you will never reach to your village (and see your family again).⁷²

Hla Htway shared his notions of malaria symptoms with what Kyaw Pyu listed. He also associated malaria with several common symptoms: body ache, recurring fever and chill, hot feeling from inside of the body. Hla Htway stated that *tanyaa-ghoo-kha* was related to mosquito bites. However, when I asked him how he got *tanyaa-ghoo-kha* in his case, he gave me a different response:

During the rainy season, water is not clean. I do not boil water. It is *tanyaa-ghoo-kha*, not *pajyo-kha* (mosquito-bite infection). I always know when I get *tanyaa-ghoo-kha* because I get body aches, fever, and sometimes my body gets swollen. I have the same symptoms every time. The heat comes from inside of my body. I have been living in my place for twelve years and I get one or two (episodes) every year.⁷³

Hla Htway's description of his *tanyaa-ghoo-kha* enacted a sense of normalcy of malaria as a common illness in villages along the border. Although he had heard that the illness was caused by mosquito bites and told me that *tanyaa-ghoo-kha* was associated with mosquito bites, he was not fully convinced with the biomedical explanatory model. From his explanation, types of *tanyaa-ghoo-kha* were traced to places where migrant villagers had temporarily worked and lodged. The following account clarifies the idea of malaria

72 Interview with A female health worker, at one of the SMRU clinics, April 23, 2011.

73 Interview with Hla Htway, A male Sgaw Karen at Wang Pa clinic, October 21, 2012.

distinctions between the two countries.

Daw Aye Aye remembered a malaria situation in her village in Pa-an inside of the Karen State thirty years ago. Aye Aye was over 40 years old. She had been living in a Thai-side Wang Pa village for nearly twelve years. Her narrative provided Karen beliefs on malaria, which was embedded in their notions of imbalance of the body caused by the elements of natural environment.

In the village (in Burma), when people got malaria, fever went up and down, up and down. Not like here (in Thailand), when we get malaria, we have cold and chills. We feel our bodies are very icy cold, like when we take a very cold bath. Three or four people hold the patient and try to warm the person, but the person still feels cold and cannot stop shaking. When the fever goes down, it feels like winter season. At the beginning of winter, chilly wind blows and they know they can be sick. So they take medication (Burmese herbal medicine) before they get sick. Here (Thailand), usually it happens in the middle of winter. In Pa-an (Burma), it is early winter, when people go to the forest.⁷⁴

Daw Aye Aye explained that villagers who have close contact with the natural environment would get malaria often. Asking what kind of contacts, she explained that it depended on one's activities and where they had traveled. She identified that some Karen migrants who spent time in the jungle to do some activities would get malaria fever. Such activities include: logging, making charcoal, collecting bamboo shoots and wild fruits, and hunting wild animals. I asked her what other groups of people would get malaria in Burma. Daw Aye Aye explained:

Poor people. It started from children. Everyone who worked in the forest got malaria. When they got sick, they had never gone to the hospital. They stayed at home and took traditional medicine.

Clearly, these informants' descriptions of malaria reflected the proxy of natural environment. All three, Kyaw Pyu, Hla Htway, and Daw Aye Aye had experienced malaria

⁷⁴ Interview with Daw Aye Aye, female Karen migrant in Wang Pa village, Thailand, March 5, 2013.

several times or at least they heard and knew about malaria as a common illness among villagers living along the border. Hla Htway recalled his activities ‘going into the forest’ and ‘drank stream water without treatment’ to interpret his illness causality even though he clearly suggested that malaria was caused by mosquito bites. Daw Aye Aye distinguished the more susceptible group in her old village by the economic status of people and their relative age.

Villagers came to suspect malaria case once they started showing symptoms, such as recurring fever and chill, body ache, hot feeling on the eyes and body aches. From these illness accounts, however, the causality of illness was not clearly linked with mosquito bites, even though they pointed out a mosquito-agent causality (*pajyo kha* or *kijyo kha*— mosquito parasite infection). There was no clear consensus among Karen migrant villagers whether it was caused solely by mosquito bites or not. When asked further, Karen patients at the clinics answered that their malaria was caused by combined factors, including individual socioeconomic status, occupations, and nature-body equilibrium imbalance.

In villages, people were afraid of taking *Ingles* medicine—biomedical, pharmaceutical drugs. As you know, poor villagers do not want to take medication, so people died. They stayed on the foot of the mountains. (Researcher: “Why the villagers did not want to take *Ingles* medicine?”) They were afraid of the medicine because they were not familiar with it. They’d never seen the medicine. That medication was powder medication. When the survey team, doctor, and the Red Cross came to give medicine to children, they did not take it. At that time, many children had fever and were breastfed. The Red Cross went house to house to provide villagers some kind of mixed powder with milk, and told them that it was milk powder. It was 1988, the end of a rainy season.

Daw Aye Aye’s story and her visitor’s explanation illuminated villagers’ anxiety over the introduced medicine by outsiders. Buadaeng Kwanchewan who studied Sgaw Karen communities in Burma claimed that the concept of “tradition” was not a static image for them. Rather, its meaning and performance have been changing in different space and time

(2001). Interestingly, Buadaeng's study has reported some cases involving sick Karen villagers who chose to become Christians, after they were treated by biomedical drugs. In this case, biomedicine and pharmaceutical drugs were considered as western invention, and the biomedicine represented the western modernity (Buadaeng, 2001).

Arthur Kleinman claimed that culture affects health care and one's illness experience needs to be understood by broad social and cultural understandings of illness, suffering, and healing process. He summarized the explanatory model as: "The notions about an episode of sickness and its treatment that are employed by all those engaged in the clinical process" (Kleinman 1980: 105). That being said, I found that explanatory model among the Karen was not a singular model, reflecting the ambiguity of the disease. This ambiguity comes from frequent contacts with mosquito, one's prolonged suffering from other illnesses, general notion of the body weakness caused by poor socioeconomic status and hazardous job environment, as well as other coincidental factors, such as political and environmental forces. Those various factors gave them ample space to reinterpret the illness causality through their own experiences in a contextual matter of particular time, space, and subsequent events.

3. Finding Malaria Patients and Naming G6PD Patients

The biomedical technologies, lab technicians' diagnosis, patients' blood samples, and medical aid's note link the patient with the disease category of malaria. However, as I showed in the narratives of physicians and the Thai MOPH officer, the medical science process was not always consistent in every biomedical place. Patients who had a deficiency in their immune system needed to go through different pathways to get proper treatment and this access was not guaranteed due to the inconsistency in the interpretations of epidemiological fact between SMRU and the Thai MOPH. In this sense, science and its

objects were not always consistent due to the lack of resources and the state bureaucracy, which often prioritize over the biological necessities (Street 2015).

Malaria can only be diagnosed with actual lab works. Even if a physician is experienced, s/he cannot make an accurate diagnosis by only physical examination and consultation. SMRU doctors told me that the Dr. Nosten taught them never to trust their medical instinct because half of them would be incorrect when it came to malaria. In endemic regions like the Thai-Burma border, people have often been infected with malaria parasites multiple times, thus it is not uncommon that some local villagers develop immunity toward malaria parasites and remain asymptomatic. That means, malaria diagnosis mainly relies on lab technicians' lab skills, expertise, and personal experiences.

The process of diagnosis is often time consuming and labor intensive. Clinics have to train lab technicians and provide them refresher courses in order to keep its standard. Dr. C, a female American physician once told me: "When there were many malaria patients in the past, lab technicians were so good at their work. But now malaria cases were not so abundant here, their lab skills became insufficient" (Personal conversation with Dr. C at SMRU clinic). It was ironic that while the clinic staff was working hard to eliminate malaria from the region, too limited number of cases would not prepare lab technicians to be good at their expertise.

At the field clinics, lab technicians administered blood test on patients by using several methods: rapid malaria tests (RDTs) and microscopic test on blood films on slides. The RDTs detect malaria parasites in the patient blood and confirm which malaria strains infect the patient within fifteen to thirty minutes. In addition, administering RDTs is relatively easy. Thus, the clinic staff at low-rank jobs handled various tasks: aside from

conducting RDTs, calling upon patients, taking vital signs, asking health problems to patients, and bringing blood samples to the laboratory. If a patient was diagnosed malaria positive, then the same clinic staff used the same method of collecting blood samples by pricking fingertip and made the blood film on a slide. To make the blood film, the staff made three dots of blood samples on a slide, and then carefully spread the blood with a thin glass on slide. At the meantime, if it was the first clinic visit for a patient, a nurse drew blood from a patient's vein and collected the blood sample into a small tube for other tests. The blood film and blood tube were brought to the lab, and lab technicians immediately process them for various tests.

At the screening test, the collected blood slides were stained with Giemsa, which was used to stain parasite cells in purple to be read by microscopists. Then the stained film was dried on the wooden box, which had light bolts inside for about twenty minutes, depending on the humidity and temperature of that day due to its natural and labor-intensive process. This whole process-stained, dry, clean- takes time, but this is so far the golden standard method for malaria diagnosis everywhere in the world. After the film was dried by heat, lab technician used solution water to clean off the stain carefully. The film was already fixed so the water only rinsed the unnecessary stains. The process of preparing a blood film took more than sixty minutes. It is a time-consuming process, yet this traditional method is more accurate than RDTs and also gives much more detailed information, such as: the parasite density in red blood cells, the parasite's strain type, and its approximate length of infection and the parasite stage. Without the microscopic test, malaria diagnosis can be misdiagnosed, and the drug regimen may not be effective, or even harmful. Infected blood cells had scizonts in the cells, but the shape of parasites varies depending on the parasite stage and strains.

One of the lab technician at SMRU clinics told me that before he started working at a lab, he thought that malaria was just one of the common diseases people could find along the border. Every time microscopists like Wiwat found infected blood cells, they counted infected cells by clicking a number counter. The information would be sent to a medical aide or physician to decide which and how much dosage of antimalarial medicine should be given to a patient.

Occasionally, blood samples of malaria patients were taken to the main office laboratory to have further biological tests especially when patients were enrolled in one of the SMRU clinical studies. The blood is a raw material that needs to be kept fresh and uncontaminated. Before noon, clinic staff put them in an icebox, and drivers delivered iceboxes to the SMRU's main laboratory in Mae Sot. These specimens needed to be taken to the molecular laboratory in the main office within two hours. Thus, one driver jokingly said to me while he was driving a car: "these samples are sometimes more important than actual patients for doctors" (A personal conversation with a SMRU driver). This account critically points out the clinical environment of the SMRU and the purpose of conducting health interventions for border population. Once patients provided samples, it is no longer their properties, but becomes the clinic's research materials. One Dutch doctor who had sent malaria patients' blood samples to a University lab in the United States had never heard back from the lab, and later he and SMRU doctors learned that his blood samples were used for the university lab's publication. This is the uncertainty existing in medical science field and thus patients' specimens become highly valued materials for researchers beyond patients' acknowledgement.

At the molecular laboratory, the specimen was frozen in minus 20 Celsius degrees to

break the parasite cells in order to extract DNA. It was carefully treated to avoid contamination from other human blood, plasmodium parasites, and bacteria. The extracted samples were then closely examined by molecular biologists using PCR to amplify DNA, whose genetic information was sequenced to be read by biologists. PCR also catch malaria DNA information that was not detectable by neither RTDs nor microscope. Dr. Nosten, the Director of SMRU and Dr. Khin, a Burmese physician at SMRU explained that because of the hidden malaria positive patients, they could potentially serve as carriers who spread the disease to family and neighbors. However, microscopic exam remains the golden standard for malaria diagnosis because of its relatively cheaper and simple devices and availability of technicians.

The laboratory test results were recorded and sent back to the clinic staff who called upon patients' names to the consultation room. If the test result was malaria, medical aid explained to the patient that s/he had *tanyaa ghoo kha*, which was caused by *pachoo* (meaning mosquito bite in Sgaw Karen) and thus they needed to take medicine from the clinic. In the patient record book, there would be a stamp that indicated their history of malaria test result, history of self-administered drug use and its contents, and antimalarial pharmaceutical drugs taken. By doctor's notes and prescriptions, patients were officially diagnosed malaria and labeled as a malaria patient on the record book.

SMRU and the field clinics identify patients affected with malaria and Glucose 6-Phosphate Dehydrogenase (G6PD), a genetic disorder that can be found in about ten to fifteen percent of the border population in highly malaria prevalent locations, by the laboratory works. The laboratory plays a key role in finding patients and identifying their risks by testing blood, and treating and monitoring their symptoms. I explore how patients

were diagnosed with malaria by lab technicians, clinic staff, and molecular biologists at SMRU laboratories. Finding a genetic disorder in human patients is conducted by biomedical practices in the laboratory.

As Margaret Lock and other scholars suggested, researchers conduct experiments to justify the notion of producing scientific knowledge and the “legitimization of such knowledge as truth” (Lock 1997:238). Biomedical practices at the malaria research clinics project the global health standard on the staff, thus the patients’ clinical experiences are often neglected at its intervention sites.

Doctors and laboratory technicians use various diagnostic tests to determine patient health conditions and sometimes to detect any genetic disorders in order to avoid future risks. In other words, the laboratory is a place where abnormalities are confirmed and patients with genetic deficiencies are labeled as a risk group. New diagnostic tests and genetic deficiencies impact the ways in which experts and practitioners see a population marked as a high-risk group. Patients are examined and tested for the genetic deficiency by a blood test. This genetic deficiency is called Glucose 6-phosphate dehydrogenase deficiency (G6PD). If one has G6PD, it causes chronic anaemia and acute hemolysis for homozygous people. While heterozygous people can be asymptomatic, this genetic deficiency can cause severe problems when immune system goes down or if a wrong pharmaceutical drug such as primaquine, an antimalarial drug which is used to clear hidden *Plasmodium vivax* malaria parasites in the liver, is administered on G6PD patients. It is an enzyme deficiency found in population in malaria endemic regions worldwide, but border regions in Southeast Asia, including Thai-Burma border is one of the areas of high prevalence of G6PD. A random sampling test conducted on Thai and Burmese ethnics shows that the prevalence of G6PD mutation

variants in Thai and Burmese ethnics is 6.6 % and 14.2 %, respectively (Phompradit, et al. 2011).

At SMRU, G6PD can become a social, political, and moral problem. This genetic deficiency marks some of the border population as more vulnerable than other populations. Malaria parasites, blood samples, and DNA become tangible objects that can be used to recognize individual patient body as a distinct entity. Yet the different institutions and lab technicians' skills often affect results and health practitioners' decisions on regimen. These examples show that the medical science results and intervention practices are not always linked together, thus when it comes to treatment, patients experience different side effects and treatments for the same disease. Malaria is thus experienced through the clinical and personal experiences among patients at SMRU clinics.

Strangely enough, the Thai Ministry of Public Health (MOPH) did not include mandatory G6PD diagnostic tests on malaria patients in their guideline as of May 2013. When I asked the Director of Vector-Borne Diseases Unit in the MOPH why the Thai malaria posts did not administer the G6PD deficiency test, Dr. Wichai Satimai answered that although they recognized that various types of G6PD existed among some Thai and migrant populations, the ratio was rather negligible, thus, they excluded the process (Dr. Wichai Satimai, the Director of the Vector borne disease unit in the MOPH in 2013). The SMRU international doctors found this diagnosis criteria gap was unacceptable, and insisted that they should maintain the mandatory G6PD tests on every malaria patient along the border, because of the possible risks.

The methodology of administering the G6PD test requires blood to be collected in a tube for the purpose of measuring haematocrit for anaemic condition and white blood cells

for immune system, morphology, and other infection possibilities. The blood is then put into an amplifying machine to extract DNA information. As the Karen staff in the laboratory said, it needs to be “cooked.” Since it is a time-consuming task and puts more work on lab technicians, not all the provincial hospitals in Thailand could include the G6PD test in their routine.

4. Health-Seeking Behaviors among Karen Patients at the SMRU Clinics

Despite the generous free medical care, not all patients would leave the clinic happy. Patients visited SMRU clinics hoping that health practitioners would find out what specific illness they might have, and provide them effective pharmaceutical drugs other than just painkiller drugs. Several patients at the SMRU clinics expressed great disappointment because SMRU medics could not find specific problems in their ill symptoms and sent them back with only paracetamol, which is a common fever relief drug in Thailand and Burma. To be fair, the SMRU is specialized in malaria diagnostics and treatment. Karen patients at SMRU suggested that there were both good or bad blood, and bad blood can cause or caused by an illness. "*Thwee* (blood) *t'gay bah* (not good)" is an expression of their reasoning certain illness that is caused by contaminated blood. The bad blood can be caused by infections, ‘air (*ker lee*) attack’, that cuts blood circulation and causes imbalance of the body, and poverty that weakens one’s blood.⁷⁵ One Karen medical technician shared his surprise of malaria parasites in the blood with me. He said:

Yes, I am more afraid of malaria now than before. Because some people, they find lots of parasites in the blood and they don’t die. But sometimes people get one parasite and die. Before I thought I it was just a common disease so I could come anytime when I was sick. But after I know that it is a dangerous disease, I always come and I tell people to always come to check. When I see parasites in the blood, I can feel the pain and how they cause problem for patients. Because even myself, there

⁷⁵ Interview with two Sgaw Karen women in September 2011 and October in 2012.

were not many parasites in my blood but I could not get through them and it was not so dangerous. But to them, I have seen their parasites that caused very harmful things.⁷⁶

When Karen patients talked about blood in the context of clinical trial at SMRU, they expressed that they were not sure how the staff would use the blood after they withdrawn from patients, and why they would need to withdraw blood so frequently. A senior medical technician reported to me:

When they started a study about 3-4 years ago, there was a rumor. It came among patients that SMRU took their blood to sell it. The reason is because they didn't see and know where their blood were taken to and what they did to their blood. For that time, the blood samples were taken to Mae Sot (where the main office and main laboratory are located). The patients were afraid to give blood, but now they can do it immediately at Mun Lu Chai clinic. I explained to the patients to see the blood samples thrown into the bin after blood was drawn. Nobody needs the small amount of blood to sell it and it also smells like fish. If you don't believe it look into the bin.⁷⁷

This rumor of blood stealing among Karen patients was not irrelevant to migrant villagers' perceptions of the ambiguity of malaria etiology and anxiety toward biomedical treatment. Blood theft has been widely reported in poor communities where biomedical interventions such as clinical trials were brought in by international agencies (Saethre and Stadler 2003; Scheper-Hughes 1993). According to Saethre and Stadler, blood theft rumors at clinical trials are related to their discrepancy between monetary benefit and actual cost (including the death), and local people's suspicions over the white people's biomedicine. Thus, rumors can be seen as a form of everyday protest against the "foreign enterprises" among the poor who is considered as powerless (Saethre and Stadler 2003:104).

A young medic at Wang Pa clinic lamented that patients would wait too long to come to the clinic and by the time they came, malaria parasites spread in the blood stream, patients

⁷⁶ A male Sgaw Karen medical technician at Maw Ker Tai clinic, December 18, 2012.

⁷⁷ Interview with a female Karen practitioner, Mun Lu Chai clinic, October 7, 2011.

experienced severe symptoms like convulsion, unconsciousness, swollen spleen, jaundice, and sometimes fell into a coma, especially in the cases of *P.falciparum*. A health staff member at Mun Ru Chai clinic told me that she had to scold patients who did not come back for follow-up checks. SMRU clinics send their community health staff to fetch patients who missed follow-up. However, migrant Karen people frequently cross the border or move to other areas, thus clinics often miss their malaria patients. She said:

This week, they were about 18, 19 pregnant women at the clinic, so I had to tell them. I told them why we took your blood, it is for the testing of anaemia, and other diseases. By taking blood, they say they lose some amount of blood. And it is also painful, and they don't like it. So I told the other *tharamu* to explain to the pregnant women more, but still they don't understand. So when they come here, I talk to them and they say yes, yes.⁷⁸

Another senior health practitioner suggested that people suspected malaria if they had fever because malaria had been very common among the local Karen population in border villages.

On Thai side, those who stay in Thailand, they are better than the other side (Karen who live in villages in Burma). People who come to the clinic are migrant workers and people who don't have Thai ID (*baat krachaa-chon*). At Thai hospitals, it costs a lot of money. So those who don't have Thai ID come to SMRU. There are not many malaria cases nowadays. Before, we used to have 30-40 positive cases but now only a few cases per day especially during rainy season. On the other side (Burma), it depends on the place. Those who stay in jungle they don't sleep under mosquito net. In summer, they do not sleep under nets. In rainy season in every house in Thailand, people sleep under mosquito net.⁷⁹

Asking why malaria cannot be eliminated even though they have been treating so many patients, he replied: "I don't know either. It is because medicine cannot treat malaria cases completely, or it is malaria itself that cannot be eliminated. Some don't look after themselves, they don't care what they eat and what they drink" (A male health staff at MRC

78 Interview with a female Karen health practitioner at MRC clinic, April 24, 2013.

79 Interview with a male Karen health staff at SMRU-MRC clinic, April 24, 2013).

clinic, April 24, 2013). From these three Karen practitioners' accounts of patients' health-seeking behaviors, although they showed sympathy to Karen villagers who did not have access to Thai hospitals due to their poverty, the lack of citizenship and health access, it was clear that practitioners viewed patients' lack of disease prevention and noncompliance to health practitioners as a causal factor.

Lee Baw was a 26-year-old Pwo Karen who was carrying his sleeping child in his arms at the in-patient ward. He was waiting for his blood result of his severe malaria. He said that he was harvesting corn in the field and started having body aches, chill and fever. It had lasted three days and he started shivering. After three days past, he finally decided to come to the clinic. I asked him why he did not come to the clinic earlier. While his eyes were still set on his sleeping child, he quietly answered:

The farm was so far and I didn't want to come. In the field, we were almost finished breaking and I was breaking some leftover corn and started harvesting beans. Sometimes we cannot handle it so we have to hire someone. If we can do it by ourselves we do it by ourselves. Because we did not have enough money to hire people this time. This year, crops got damaged because of flood, twice in August, and bean was eaten by insects. We have to pay back to Kee Sa Lee.

Lee Baw explained his reason of not being able to come to the clinic was because of his work. After he took paracetamol, fever relief medicine for three days, symptoms worsened and he decided to come to the clinic.

It was getting worse. *Tanoo* (chill) continuously. *Thara* (health worker) at the clinic took blood from here and there. But they did not tell me what. *Thara* said I had to come and take medicine for three days. They explained that I had big one (*Plasmodium falciparum*—severe malaria case) and they said it's plenty. After finished medicine I still had germs in my blood so they asked me to come back. I came back four days already. Today, I don't need to take medicine. [Asami: Why did you join the study you are in?] I don't know if I am in a study, I just wanted to make sure to cure malaria. If it becomes repeating and germs stronger, it is dangerous. Yes, malaria is from mosquito. When I go to work in the field, you are bitten by mosquito.

When I work in the field, I drink water from the stream. If you drink water from stream, you get mosquito infection. That's what they said. It comes from the hills.⁸⁰ Although a practitioner must have informed the patient about the study, he did not

understand what was taking place. However, a practitioner's explanations of "plenty" germs in his blood and the risk of getting stronger germs convinced him to comply with the clinic's order. Furthermore, the fact that he was recovering after receiving treatment convinced him to continue coming to the clinic as part of a clinical study in order to completely get rid of the "germ" from his body. The visualization of germs in blood and dysfunctional organs succeeded in converting the Karen migrants' health-seeking behaviors.

Naw Mu, a fifty-six-year-old female Sgaw Karen patient recently moved in KK village with her husband and a five-year old granddaughter. In 2010, the battle between the Karen National Union (KNU)-led army and the pro-Burmese, Karen Democratic Buddhist Association (DKBA)-led army started fighting near her village, thus they moved to KK village next to Wang Pa clinic. Naw Mu seemed very exhausted and looked much older than her actual age. We found that she had been diagnosed with malaria two months ago, but now her granddaughter was told that she was malaria positive with *P.falciparum*. While they were waiting for a study nurse's call, I asked Naw Mu her health problem. Naw Mu started telling me her story of previous malaria episode.

I never got sick in Mun Lu Chai (her previous village). It is only after I moved in this place. When I got malaria previously, I stayed in the clinic. It was two months ago, before War Ma Win (before July), I came to the clinic. I felt cold and headache, irregular heartbeat. I got very high fever all day, at daytime I vomited. Before I came to the clinic, I had fever at home two days. No eating, no appetite. When I ate food, I vomited. When I drank water, I vomited. Asami: Why did you stay at home two days?) The clinic was closed. It started on Saturday and Sunday and I thought the clinic was closed. No money to buy medication.

⁸⁰ Interview with Lee Baw, a Pwo Karen male patient at WP clinic, November 5, 2012.

Even after she recovered from malaria, Naw Mu still suffered from various health problems, thus, she decided to come to the SMRU clinic to check her blood. She told me that her problem was blurry vision and irregular heartbeat, which started two days ago. Naw Mu explained that she hoped to get IV infusion from the SMRU clinic, but it was unlikely that she would get what she wanted from the medic. She believes that IV infusion would give her energy and quickly solves other health problems.

When I have health problems, I come to the SMRU clinic and have them check my blood first. If I don't have malaria, I go back to my village and ask a village nurse to give me IV. One IV bottle costs one hundred baht. If I could get IV infusion like other patients here (in-patients at the SMRU clinic), I would feel better.

Contrary to Naw Mu, who recovered from malaria, her malaria-positive granddaughter was running around with other small children at the clinic. I asked Naw Mu why she would not stay in the clinic with her grand-daughter. She explained:

If you stay here at the clinic, one day you get 300 baht.⁸¹ But I live with my husband and this grandchild in our village. If the child stays in the clinic, she runs away. I cannot follow her where she goes and play. Because I am old and cannot chase her.⁸² After a consultation, a medic concluded that her blurred vision was due to her age and she did not have a sign of recurrence of malaria. Thus, he ordered only multivitamin tablets to the pharmacy for Naw Mu's pick up. Disappointed, she said she would go to a village health post and buy an IV saline bottle. Naw Mu's granddaughter on the other hand, received 120-baht in cash (approximately US\$ 4.6) for her malaria follow-up,⁸³ which was explained to me that it was for Naw Mu's missing daily wage and transportation, but not for her granddaughter's participation in a clinical study. In Naw Mu case, her description of her

81 This answer indicates that Naw Mu seemed to be previously a study patient in a clinical study at the SMRU.

82 Interview with Naw Mu, female Sgaw Karen patient at WP clinic, September 8, 2012

83 This cash seemed to be a compensation for a follow-up in a clinical study. Thus, somehow Naw Mu's grand-daughter might have been involved in a clinical study at the SMRU clinic.

current health complaint and previous illness episode gave her the status of a vulnerable patient and gave her a rational reason to negotiate with health practitioners to receive her favorite treatment. I asked Naw Mu how she got malaria through a translation by Colley Paw, who was my temporary research collaborator. But Naw Mu did not answer to my question⁸⁴ at first. I changed the question to involve more generalized situation (“Why do people get malaria in your village?”)

Naw Mu (NM): When I felt I might have malaria, have high fever during daytime and feel cold at night. I felt chill and rigor (shaking) and I thought it could be malaria.

Asami: What else?

NM: Nothing. I felt cold and I came for blood check. Also, I had headache.

Colley Paw (CP): Have you had malaria before?

NM: Only one time at Koko village.

Asami: Before you came here, you never had malaria. After you moved here, you got malaria...[interrupted]

NM: I had malaria only one time after I moved here. I had never gotten sick from malaria before.

CP: Why do you think you got malaria this time?

NM: Ha, ha, ha...[laughed]

Asami: Why do people get malaria in your village?

NM: They go outside during the daytime when it is hot and when you come home and take a bath too late, then, they get *taku?* (fever) and *ta'kli* (cold).*Kotakichaa tapualoo* [sharp pain in the head], *pukatee palii* [nearly to break].

[Colley Paw tried to clarify my previous question]

⁸⁴ I asked “Why do you think you got malaria this time?”

CP: Later you don't want to get malaria, how do you protect yourself?

NM: I don't know.

CP: Where do you sleep?

NM: I sleep in the farm.

CP: Do you sleep under mosquito net?

NM: When you sleep under mosquito net, it prevents from mosquito bite. When we sleep under mosquito net, no mosquitoes bite. Mosquitoes are big. After eating dinner, we go under the mosquito net.

Asami: Why you don't like mosquitos? What happen when mosquito bite you?

NM: Malaria. When mosquito bites me, I get itchy and become malaria. I sleep under mosquito net and come to the clinic to prevent malaria.

Naw Mu's perceptions of the illness causality were based on her understanding of the body imbalance and bodily reactions to sudden environmental changes. When one has malaria, the body experiences repeating hot and cold conditions. At the end of interviews, I found that both Lee Baw and Naw Mu had known the mosquito causal model. However, their accounts were not clear if they did see mosquito bites caused them malaria illness by itself. The mixed perceptions were similar to what we found in previous three migrants' interpreting the malaria causality.

Like any other Karen migrant patients who sought treatment at SMRU, Naw Mu often switched the subject matter or did not answer questions immediately. This happened quite often when I asked a particular question, which was to ask their understanding of malaria causality. Patients frequently declined to answer the question to avoid further questions and told me instead, "Ask thera (male practitioner) they know the answer" even though I stressed that I was interested in knowing what they would think. At first, I presumed that it was translation problems between I and my research assistant. Or, I presumed that

Karen villagers were not accustomed to be asked how they understood illness at clinical setting. However, as I encountered this situation quite often, my research assistant and one of the clinic workers explained that it was Karen people's tactic and norms of acting ignorant to avoid inspecting questions. I came to realize my ambiguous status as a foreign researcher and how asking questions that seemed unrelated to their concerns and normative knowledge among health practitioners, was perceived so strange to patients. Therefore, their skeptical attitudes and feigned ignorance came to the center of questioning my position as well as their expected role as patients at the clinic.

Next, I investigate how their narratives of health-seeking behaviors were intertwined with their personal illness history, larger socioeconomic structure, and politics of citizenship. In most studies of illness narratives, researchers stress the intersubjective process in which one's understanding of illness is conceptualized through interacting with professionals as well as people around them. In this regard, understandings of illness are often constructed through the interactions of various agents who have varied social and economic positions with different access to power and resources (Crandon-Malamud 1991; Saethre and Stadler 2013). I juxtapose practitioners' accounts with Karen patient accounts of their malaria experiences to identify the gap in cultural perceptions of the illness between both parties and practitioner's views on patients' health-seeking behaviors. By doing so, I elaborate on patients' views of malaria as a social illness through their interactions and negotiations with practitioners in the biomedical setting. Drawing upon extensive, in-depth interviews with patients and Karen health practitioners, as well as using ethnographic data from participant observations at clinics, I discuss how people negotiate the idea of the body and illness in interactions in the light of "reflexive" process of creating knowledge (Garro and Mattingly

2000; Kirmayer 2000).

Libbet Crandon-Malamud (1992)'s study in Bolivia showed that the people switch their illness accounts based on their conceptualized cultural identity by ethnicity, race, and one's socioeconomic status. Social structure and cultural identity not only define one's soul(s) but also their illness symptoms. Here, medicine becomes a metaphor of ethnic boundaries (Crandon-Malamud 1992). In cases of interactions between Karen patients and practitioners, although they both are ethnically same, used to share similar living environment, the access to biomedical knowledge provided health practitioners with a clear notion of the distinction from patients' standpoint. The stigmatized identity of the "ignorant" Karen in the Thai public health discourse in general among Thai villagers does not cast any negative image on Karen health practitioners. In fact, practitioners were very comfortable sharing their non-biomedical beliefs and Karen understandings of illnesses with me, because there was no risk of being perceived as ignorant. This was strengthened by the fact that they practice biomedicine and knew scientific explanations of diseases, which I presented no knowledge to them. Biomedicine defines certain roles among patients and practitioners at the medical setting, and thus, it also shapes the ways they interact each other.

Yaa-chud: Fake Medicine

Before patients came to seek treatment at the SMRU malaria clinics, most people especially adult patients who were engaging in agricultural and forest work outside said that they had spent about a few days trying to self-medicate themselves by taking over-the-counter drugs (OCDs) which they bought in villages. This was considered a problem among health practitioners at the SMRU clinics, because it could escalate the drug-resistant problem among the migrant population along the Thai-Burma border (Dondorp et al. 2004; Newton et

al. 2008). However, the risk was not gauged among the Karen migrants.

After I learned that Kyaw Htoo had not been feeling well for almost ten years, I asked him what kind of medicine he took prior to coming to the SMRU clinic. It seemed to me impossible to feel unwell so long time. Kyaw Htoo explained:

I do not know the medicine, but it was malaria medicine. Sometimes I do not know the medicine, but I take medicine, which I get from the clinic. I get medicine from a small pharmacy shop in Koko village (just next village across the river from the malaria clinic). It is not a clinic. That small shop also has injections. [...] Why don't I come here? Why do I want to go to Koko (health clinic or small pharmacy shop in Koko village)? It's because I need to go fast and I went to a pharmacy shop first. I go to Koko and take medication. Here, there are many *lema* (patient record book kept by patients). My *lema* at Wang Pa (SMRU malaria research clinic) is full. Three, four *lemas*, full. If I come to Wang Pa, I have to wait. When I take medication (from pharmacy shops), I get better in a few days. But it comes back again.⁸⁵

His account suggested that aside from the dispensed malaria medicine from the clinic, he also medicated himself by taking over the counter drugs (OCDs), which were available at small corner shops in villages. Such small shops sell various kinds of medicinal products, including Burmese herbal medicine and pharmaceutical drugs mixed with variety of pills, called *yaa-chud* (“cocktailed drug”).

Yaa-chud is a pharmaceutical drug and it often includes several kinds of antibiotics and Paracetamol, which is similar to Tylenol in western society, a very common pain relief OCDs in Thailand and Burma. Many *yaa-chud* drugs are produced in China and smuggled into Burma. They are often sold as the anti-malarial drug, but in fact, they often do not contain any effective component for anti-malaria. Although the Burmese government has banned selling and buying *yaa-chud*, local private pharmaceutical companies can obtain these drugs from the black-market route. They remove drugs from “anti-malarial” drugs with other multivitamins and Paracetamol, then, sell in a small package as a ready-made cocktail

⁸⁵ Interview with Kyaw Htoo, a male Sgaw Karen at Wang Pa clinic, September 25, 2012.

drug pills (Personal conversation with Dr. Khin Maw Lwin, 2011).



Figure 5.1. *Yaa-chud* sold at village shospes in Burma

One package of *yaa-chud* cost only five baht (in 2011-2013) and it was affordable even among poor villagers, who could not pay for emergent medical trips. However, the continuous usage of these unauthorized *yaa-chud* could cause severe health problems, chronic disability, and even death. In broader aspect, the counterfeit drugs could also cause resistance in parasites. Knowing that they would have probably be scolded by health workers, patients at the malaria clinics often reported that they would not have taken any drug except Paracetamol at home at their first consultation. Thus, the column on “self-medication” on a patient record often indicated that they had taken Paracetamol at most.

Patient health-seeking behaviors are the most difficult topic that one can prove and analyze. Many old patients, especially elder females told me that they often went to seek “injectionist” in the village. One of the health practitioners who worked as a medical technician at SMRU clinic reported me:

People in Burma-side go get *Kathee Hgee*—injection from *Kathee Thera*—medicine doctor, injectionist. Injectionists are trained partially at military and know how to give injection. Those who are from TUT (abbreviation of village name), they do not come to the SMRU clinic because they go straight to the injectionists for treatment. They get injection when they are *lobwe*—get tired, back pain, and joint pain. I used to go there often to TUT. When they came down to the clinic, (I asked) did you take any medicine? They said no, but from their children they smell Ampicillin, ha, ha, ha... [laugh].⁸⁶

At the clinic, Dr. Nosten indicated one female patient who seemed to be comfortable with Dr. Nosten’s pointed finger at her saying: “This patient is very naughty. She almost died from hyper-malaria with *P.falciparum*, because she took some pills from a shop in her village and didn’t come to us immediately.” She looked in her mid-twenties, slim, and her thick waist-length black hair was bound in the back. He continued:

When she came to the clinic, she was unconscious. Even after she recovered, she still has jaundice left on her skin and eye colors, you see? It is a common problem here in the Thai-Burma border. People buy fake medicines in their villages and don’t get proper diagnosis and treatment in time. This is one of the reasons we are facing drug-resistant malaria problem here. So we encourage people to come to our clinic whenever they have fever so that they can get free medication.⁸⁷

Kamat (2001) described the same phenomena of frequent use of IV-saline drips among villagers in his research field of Mumbai (New Bombay in India). According to Kamat, the IV-saline drips was often demanded by patients, and it was becoming an economic status marker among people. Pharmacists also sold antimalarial drugs without

⁸⁶ Interview with a female Karen Medical technician, April 24, 2013.

⁸⁷ Interview with Dr. Nosten, March 2011 at SMRU-Wang Pa Clinic.

doctor's prescription and the dosage often did not follow what WHO recommended in their guideline (Kamat 2001). In the Karen migrant contexts, IV-saline drips were not necessarily cheap, considering migrants' average daily wage ranged between 120 - 200 baht depending on the location and nature of work. Access to the needle treatment (IV-saline drips) conferred certain status, both economical and biomedical, among people in the Karen migrant community along the Thai-Burma borderland.

5. Conclusion

Karen undocumented migrants shape their understandings of malaria in myriad ways. First, they perceive malaria as an illness found in the borderland, and it is a biosocial illness that is becoming hard to treat without receiving the correct biomedical treatments, which can be obtained from SMRU and clinics. Second, Karen patients perceive that malaria is different its intensity and transmission patterns in seasons between Burma and Thailand. Through their experiences, they conceptualize that malaria in Burma is more severe and harder to treat than the one in Thailand. Third, and the most importantly, they recognize the disease has been with them because of poverty and suffering that they endure as stateless citizens.

Viewing from narratives of patients and practitioners, Karen migrant people's conceptualizations of malaria and bodily experiences from the illness and their body equilibrium explanatory model are reshaped and reconfigured by the individual malaria experiences along the border, their socioeconomic status as illegal migrants, norms of expected roles at the clinic, and cultural politics of ethnicity and citizenship. Patients' narratives present that they found a malaria infection- *tanyaa-ghoo* or malaria infection illness *tanyaa-ghoo-kha* to be a relatively common illness. However, many factors (different types of parasites, prolonged suffering time, individual differences, and different experience

of exposure to environmental factors) gave them a feeling of uncertainty in which, they were not particularly sure if their malaria was solely caused by mosquito bites.

From this analysis, we can see that the piece of biomedical knowledge does not always give Karen migrant villagers a full account of explanations of their common illness. Rather, malaria along the Thai-Burma border particular, is understood by Karen migrants based on their understandings of places: “here” versus “there on the other side” in two different countries depending on where one stands at. Moreover, a shared socioeconomic status as non-citizen and illegal migrant workers in the forest and agricultural field gives them a consensus of their routine suffering as well as validated rights to seek healthcare treatment at the malaria clinics, even though one’s diagnostic result cleared their status as malaria-free patients.

Most of the old Karen villagers who had stayed in villages along the border long enough to experience malaria multiple times were perhaps aware of different types of *tanyaa-ghoo* that existed along the border through hearing from others and being diagnosed at the malaria clinics. The knowledge of two different types of malaria infections (‘severe one’ and ‘not severe one’) was shared between Karen patients and Karen health practitioners without incurring a further problem. Moreover, some Karen villagers knew that the ‘severe one’ could cause brain damage, or death even among adults. This suggests that Karen villagers carefully observed their onset symptoms. This is more so in the case of child malaria.

I did not discuss on child malaria cases in this chapter, but Karen migrant villagers tended to respond to child illness cases quicker than adult cases, and often brought children to biomedical health practitioners as soon as possible when small children show feverish

symptoms. Interesting enough, there was no one who reported to me that they used *yaa-chud* or any biomedical anti-malarial drugs on small children before they consulted health practitioners. Also, in children's fever episodes, adults reported that they carefully chose medications and did not go seek treatment from injectionist before seeking diagnose and treatment. This suggests that the Karen did not apply their illness reasoning to child's case necessarily. However, this needs further investigations, and it is a misleading to conclude that people understood child malaria differently from adult malaria different.

I further draw on Farmer's critique to clarify my intention in this chapter on the Karen understandings of malaria and their health-seeking behaviors. I argue that the politics of accusations and playing the ignorant patient role are not two separate things. The illness narratives of Karen patients and participant observations could bring an interpretation that Karen migrants used an expected patient role, which is an ignorant patient, in order to secure their continuous access to care at biomedical clinics. These patients also regularly bring up their accumulated patient record to legitimate their status as biomedical citizens requiring care. As we saw in Daw Nay Htoo's case, patients often tried to escape from questions posed by outsiders by feigning ignorance in order to avoid situations in which their cultural knowledge was tested by outsiders and health practitioners.

Considering the culturally and socially imposed image of patients, it is understandable that patients try to avoid any confrontation in the clinical setting. Karen migrants' narratives and behaviors suggested that they played a socially expected patient role as docile and ignorant, and avoided confrontation or even questioning about a medical process to practitioners at the clinic. I suggested that they did so, because getting access to health care at the biomedical setting and receiving much support and continuous care were

the patients' priority at SMRU clinic

CHAPTER SIX KAREN MIGRANT NARRATIVES OF SOCIAL SUFFERING IN THE THAI-BURMA BORDERLAND

By stepping out of the clinical setting and the malaria paradigm, this chapter discusses experiences of life among the Karen undocumented migrants in the Thai-Burma borderland. I am going to start this chapter with an excerpt from my fieldnote. The story did not have specificity in personal information, nor did I know which village the Karen person lived in. Despite the anonymity, the story, or narrative of the woman made me think how they dealt with beloved one's deaths in the Thai-Burma borderland besides suffering from malaria. My research assistant later explained to me what the woman had said, but in my fieldnotes, I could only admit little agony on the woman's face when she was telling the story, and everyone else gasped in surprise. Here is the story from excerpt.

I was eating phad krapao gai saap (a fried rice with Thai holy basil, green chilies, and minced chicken meat) with my research assistant at a small corner shop restaurant nearby the SMRU Wang Pa clinic on September 18, 2012. Karen women, who finished their antenatal checkup at the SMRU clinic, came to have their lunch before heading back to their village in Burma. A shop lady asked one of the ladies, "Are you ready for delivery?" in a friendly manner, and her response struck my research assistant. "Oh, already had one, and (the child) already died!" The shop lady gasped, and asked the lady "Who died?" The lady continued: "Two people, my son and my younger sister. They were drowned in the river. My younger sister brought my son to the river bank to wash their feet on a small bridge. At that time, the water level was high, and an unknown male called them from the other side of the river, so they approached near the water. Then, they fell into the river and drowned in the water. Later, people found their bodies floating on the river with their faces up." The lady continued her story, and

went on what happened after the deaths. The family went to see a spiritual healer who could perform rituals in Pa-an (which is located six hours by driving a car from Myawaddy, the other side town of Mae Sot) and asked why her sister entered the river with the boy and how she drowned. The spiritual healer replied to her that they were called by an evil spirit which was a male, and he got drunk and drowned at the same location.

This is a story which my research assistant heard during our lunch time. I was not aware of the conversation, but after the conversation, I noticed that people looked disconcerted and the shop became silent. The story shows that illness and death are not so isolated experiences from their lives. Numerous stories of casualties from accidents, injuries, illness, and maternal and childbirth were prevalent in everyday life among the undocumented Karen migrants in the Thai-Burma borderland.

I expected to hear about malaria experiences of people in their local village setting, but malaria was only a part of their illness experience, and only caused temporary bodily suffering. Living with poverty and hunger, such illness is understood as a poor people's disease. Yet, the ways in which people interpret the meaning of the suffering and violence which occur one after another in one's life, on top of their everyday struggles, require special attentions.

Karen migrants and refugees who fled from Burma suffered through long journeys on foot and escaped from armed conflicts between the Burmese and Karen groups. But in this chapter, instead of focusing on the details of their exile stories, I focus on their narratives depicting other suffering experiences through living in the borderland. The life histories of suffering among the Karen undocumented migrants embody the structural violence as well as everyday violence that are associated with discourses of ethnicity and citizenship, as well as the local political economy. By focusing on life histories of individual migrants, it parallels everyday

struggles of individual migrants and the wider social and economic patterns that shape the life of undocumented migrants in the borderland. In doing so, it also elucidates political economy of the undocumented migrant life in the borderland, and the poverty as well as structural violence that are embedded in the historical context of the colonialism and followed nationalism in Burma, as well as the conflicts within the Karen ethnic group.

Political persecution by the Burmese government over the ethnic minority peoples in Burma caused approximately 100,000 internally displaced peoples (IDPs), who were mostly Karen ethnic groups, fled into Thailand. The Karen people were persecuted in their villages by the Burmese military junta, and many had lost their lands and house properties in the Karen State. Before the internal ethnic conflict, the majority of Karen villagers in the Karen State⁸⁸ were farmers and foragers who lived in the forests and hills who practiced conduct swidden culture and collected forest materials. Losing the land impoverished the Karen villagers, who depended on their lands for their livelihoods. The Karen who lost their villages were pushed to move forward to the mountain areas and uphill in the borderland, where they were exposed to malaria and other risks, such as landmines and guerillas. In newly settled places where they did not know anyone, they met further hardships too: illness, violence, human trafficking, and death.

This last chapter frames the conjuncture of the structural violence among the Karen undocumented migrants in the borderland and juxtaposes individual suffering experiences from malaria within the paradigm of everyday violence. The purpose is to situate malaria within a wider social, economic, and political context of the people in the borderland. Malaria makes the Karen people in the borderland suffer, certainly. But there are more stories behind their

⁸⁸After the Second World War, the Karen population was widely spread in and around the Karen State, with majority of Karen people lived outside of the Karen state area in and around the Karenni states and Salween district (Christie 2000: 114).

vulnerability to the illness. Malaria deals further suffering to the people who have already endured various forms of violence everyday, including deportation, disease, accident, discrimination, human trafficking, assassination, and other physical and mental abuses.

The first section of this chapter shows life histories of three Karen undocumented migrants. I present three vignettes of life histories to illustrate the everyday violence and their social sufferings in the borderland. These vignettes were individual; however, similar stories permeated in narratives of other undocumented migrants. Thus, we can assume that the violence was socially experienced and the experience of suffering is socially shared. Such experiences of violence and suffering are not conveyed by statistics, not to mention ones of undocumented migrants, but violence has directly and indirectly affected their illness experiences.

The second section describes my personal experience of suffering as a fieldworker in the border town in Thailand, while conducting fieldwork as a foreigner. I reflect on my personal experience to describe the everyday violence in the borderland. Although my experience as a Japanese citizen cannot be juxtaposed with my informant experiences without any citizenship, the physical violence that I have experienced followed by discrimination and political economy in the aftermath of the accidental event significantly changed the way I see the precarious lives of undocumented people in the borderland and social experiences as migrants.

The third section draws with theoretical orientations. From the theoretical perspectives of critical medical anthropology (CMA), I particularly focus on the discussions on violence as a theoretical framework. The last section of this chapter discusses how such structural violence and everyday violence impact the lives of undocumented migrants by critically reflecting each theoretical frameworks and weaving stories together into theoretical discussions.

1. Life Histories of Karen Undocumented Migrants in the Borderland

Daw Aye Aye's Story

Daw Aye Aye is a female Karen migrant who has been living in the border village in Thai side for nineteen years. Having a Burmese name, it was confusing to me that she was actually an ethnic Karen who used to live in the Karen State in Burma. She was a farmer and living in a house made out of wood, bamboo, and leaves just like any other villager's house in the middle of agricultural field in this borderland. Inside her house, there was a little Buddha statue, a miniature of a gold stupa, and amulets placed on a small wooden shelf. She was a Buddhist Karen from its display.

When I visited her house for our interview with Myo Chit Minh, my male research assistant who was in the mid-twenty, there were several young Karen migrants who were putting small potatoes into bags under the floor. The people were seasonal workers from Burma. They work in agricultural fields in Thailand for nine months and then go back to Burma during the new year season. Daw Aye Aye made a joke about the young migrant workers from Burma, who were picking up dried potatoes under the house floor, saying that these migrant workers were like animals, collecting food on the ground. Holm (2013)'s study reveals that the market inequalities and local discriminatory practices drive undocumented migrant workers from Mexico to engage in back-breaking labor position in the strawberry picking field (Holms 2013). The labor position and type of work that the young Karen undocumented workers engaged in under the house of Daw Aye Aye manifest the bottom of "the ethnicity-citizenship-labor hierarchy" (ibid: 106) in the agricultural fields in Thai border villages. Thus, the analogy of animals referred to by Aye Aye precisely describes the labor and social position of the people in the borderland.

The life of Aye Aye revealed a series of hardships in her life. She spent a poor childhood

as a fifth child in a village far from the borderland in Burma. The family collected plants from the forest and sold the bundles of plants at the market. She lamented on the poverty that kept her away from schooling and health access during her childhood. Before Aye Aye came to Thailand as an undocumented migrant, she was living in the Karen State, and worked in fields and raised livestock as a farmer. After she was married to her husband, she had two pregnancies. However, the second one resulted in a stillbirth and she had to seek an abortion by a traditional birth attendant. Aye Aye explained that she got unusual vaginal bleeding and the traditional birth attendant confirmed that the baby was dead in the womb.

The abortion was more difficult and more painful than normal delivery. It was easy to have the baby out, but painful. The birth attendant massaged and compressed my belly, and the baby came out easily, but it was very painful. The traditional birth attendant used the cooking oil to lubricate to take the dead baby out. [Myo Chit Minh (MCM): “How did the traditional birth attendant know the baby was dead?”]. She felt the belly and the baby was not moving. She knew the baby was already dead. She pushed my belly until baby came out.⁸⁹ The aborted (stillbirth) baby was a boy.⁹⁰

After the abortion, she had heavy bleeding and had to go to the Mae Tao clinic in Mae Sot, which is also known to migrants as a hospital for migrants. At Mae Tao Clinic, patients do not charge patients. However, they have to pay for the transportation, which is not necessarily low cost for those undocumented migrants.⁹¹ But in case of an emergency, they hire a taxi which costs 500 Thai baht (approximately US\$ 17 for one way). In addition to the transportation cost, the Thai police often prey on the poor migrants who cross the border, and if they catch undocumented migrants, the police send them to the detention center in Mae Sot, or send them back to Burma if they cannot bribe the police officer. Although Aye Aye could manage to get to the Mae Tao clinic, the staff could not do anything for her bleeding from her uterus, so she was

89 I do not know how she knew for a fact that the aborted fetus was 8-month-old.

90 Interview with Daw Aye Aye at her house in Wang Pa, March 5, 2013.

91 Daw Aye Aye paid 120 Thai baht, which was equivalent to US\$ 4.

finally referred to the Thai Mae Sot General Hospital, where the surgeon removed her uterus.

Aye Aye's misfortunes did not stop there. Her husband was involved in a car accident in Burma and unfortunately, the other party was a Burmese official's car. While both parties survived, an officer was injured and this resulted in the incarceration of Aye Aye's husband. She tried to get her husband out of the jail, and in order to do so, she had to sell their house and land to pay the bail. But her husband died in the jail six months after he was incarcerated. Aye Aye described her life after losing her husband as if she were "only eating" at that time, meaning that she did not remember what she did and what was happening around her. Without having any property left, she followed her friends and smuggled into Bangkok where she found herself sold by a human trafficker. Aye Aye recalled:

The human trafficking person told me to work at someone's house and promised that I would get two thousand baht per month. But I did not get the money for eight months, so I asked the house owner and they told me that I was sold by a human trafficker. I ran away from the house. I ran to the bus gate number eight. Someone gave me money. After I arrived at Mae Sot, I was caught by the Thai border police, and sent to the immigration detention center under the Friendship Bridge. I tried to contact my Karen friend who sent me to Bangkok. She was a neighbor and close friend. When she heard that I was caught by the police, she ran away and did not contact me.

The story of trafficking abruptly ended, and Aye Aye did not mention further how she managed to escape from the Thai Border Patrol Police (BPP). While I was waiting for her story to continue, I noticed that she told me these intimate and painful stories without changing her face expression at all. I broke a silence to ask her about her experiences of hardships and healthcare options back in Burma. She had never seen a medical doctor at a biomedical facility in Burma. But she recalled the deaths of her relatives who died from malaria in the late 1980s.

Malaria had been endemic in the eastern Burma and further east in the borderland. But when the epidemic started in the late 1980s, it killed many villagers, especially those who were living in the poverty and in close proximity to the mountains and hills. According to her, many

people died one after another during the epidemic period. Aye Aye's uncle, nephew, and grandmother also died from fever and malaria-like symptoms. She called malaria as a killer of "poor people" because they did not have money to go to the hospital immediately.

[It affected mostly] Poor people. It started from children. Everyone who worked in the forest got malaria. When they got sick, they had never gone to the hospital. They stayed at home and took traditional medicine. In villages, people were afraid of taking *Inglesi* medicine—biomedical, pharmaceutical drugs. As you know, poor villagers do not want to take medication, so people died. They stayed on the foot of the mountains. [Asami: "Why the villagers did not want to take *Inglesi* medicine?"] They were afraid of the medicine because they were not familiar with it. They'd never seen the medicine. That medication was powder. When the survey team, doctor, and the Red Cross came to give medicine to children, they did not take it. At that time, many children had fever and were breastfed. The Red Cross went house to house and mixed the powder with milk powder and told the villagers that it was milk. It was 1988, the end of rainy season.

In the 1980s, drug-resistant malaria had already been reported from health facilities in border districts in Thailand. Migrants and refugees who visited health posts, border town hospitals, and refugee camps in Thailand had suffered from the drug-resistant *Plasmodium falciparum*, a severe malaria. Thus, deaths of Aye Aye's relatives were possibly among the many others who were contracted with *P. falciparum* parasites and could not receive proper treatment in time.

Daw Aye Aye had always been poor since her childhood. Survived from the malaria endemic and an epidemic, which killed her three relatives back in Burma in the 1980s, she associated with her series of unfortunate life experiences -- the loss of her husband, property, stillbirth child, own uterus, and experiencing human trafficking -- with poverty. Poverty narrative permeated throughout her life history. However, what should also not be missed from her story is that there were everyday violence. In the border towns in Thailand, the Thai police patrols on streets to catch undocumented migrants and fine them to get the money. Migrants, especially those who cross the border to seek immediate health care in the migrant clinics are placed vulnerable position in the context. The human trafficking in the Thai-Burma borderland is

also one of the everyday violence for the undocumented migrants. Because they do not carry identification card, they are often found in a dead-end situation in the place where they cannot ask for help in their own languages. In Aye Aye's case, the trafficking was intermediated by her close friend who betrayed Aye Aye. Thus, it can be interpreted that violence surrounding the Karen undocumented migrants is a continuum, including not only direct physical violence but also indirect and symbolic violence that can be found in their everyday life. Having such violence in everyday life, suffering from malaria is considered as an opportunistic infectious disease that could have spared one's life, had the person not been poor.

Saw Kah Maung's Story

When I met Saw Kah Maung at SMRU- Maw Ker Thai clinic, he was with his 14-year old son who was diagnosed with malaria. The father and son were sitting quietly in the study room where a clinical study nurse was explaining about a recruitment for a clinical study of anti-malarial drug. The father's left leg was lost, yet he was still attending his sick son. I learned from one of the clinic staff that he lost his leg by an injury from a landmine explosion. I asked him if I could talk with him and he agreed. He started answering my question quietly while his son was staring blankly towards the outside.

Saw Kah Maung was from a Karen village in Burma, called Ler Geh, which was about thirty minutes away from the clinic by car. He moved from Mae Kon Ken village to Ler Geh when the fight between the Karen National Union (KNU) and the Democratic Karen Buddhist Army (DKBA) intensified in Maw Kon Ken. Prior to his accident, he was making charcoal by cutting trees and burning the logs in the forest. Logging activity in the forest was prohibited by the DKBA, but he had no choice to survive and one day, he stepped on a landmine when he entered the forest. Saw Kah Maung recalled:

I went to a place near Leh Ger village for logging with another Karen. There used to be a logging company in the forest long time ago. I did not know the place, and just followed the person. And he did not know that soldiers unwanted us to go there. After the accident (by stepping a landmine which was buried perhaps by DKBA soldiers), the DKBA soldiers were very angry at us and they told me never try to go back to the place. If there was no one to carry me back to the village, I would have died there. My friend carried me and villagers sent me to the Mae Sot General Hospital directly.⁹²

Four years since the landmine accident, he had been still suffering from the loss of his left leg even though he had been using a fake leg. Saw Kah Maung did not have any money in his bag at the time of his accident, thus, he could not pay the cost. The Thai hospital referred him to the Mae Tao Clinic, which provides free healthcare to undocumented migrants and refugees, so that he could recover and heal the wound. After he recovered from the surgery, the clinic presented him a fake leg and an international volunteer person trained him in walking for two weeks with his new leg.⁹³ It took two years to heal the scar on his left leg due to the pain and infections. During that time, his right leg which escaped from mutilation but was also injured, started giving him pain, and he could no longer work in the field as much as he did before. Saw Kah Maung was still dealing with the pain when I met him at a SMRU clinic. He told me:

Sometimes I want to kill myself because of my leg, because I cannot work anymore. When people see that I am missing one leg, they don't want to give me a job. (At the Thai Hospital) They were also going to cut my right leg, but I asked them if I could keep one leg, so that it would be better for me. I didn't want to cut my both legs, so they kept my right leg. But it took long time to heal and learn to walk with one leg. After the wounded leg was healed, Saw Kah Maung needed to support his wife and the youngest of their three children, thus he went back to work in the field in spite of his wounded body.

Prior to the accident, Saw Kah Maung used to make 160 Thai baht (equivalent to US\$ 5.3) per

92 Interview with Saw Kah Maung at SMRU-MKT clinic, April 11, 2013.

93 Although he lost his leg, it can be said that his case was still lucky because he could immediately receive a mutilation surgery and after-care treatment.

day by selling two bags of charcoal, and additional 80 Thai baht (US\$2.7) if there was any work available in someone's farm. However, after he lost his leg, there was not much work to do in the field due to his disability, thus he could only earn 80 Thai baht as daily wage from cutting grasses and sugarcanes, while others could make 120-150 Thai baht (US\$4-5) per day. Because the money was not enough to support the whole family, he also needed to go back to the risky labor of making charcoal in the forest. I asked him where he could cut trees and make charcoal these days. He waved his head and said: "I have to go far away from the village to the deep forest, because I have to cut down trees. Soldiers don't allow us to cut down trees, but I have to do it to make my family's living. Because I don't have a good leg, I have no choice but to choose this dangerous work." On top of the severe financial situation, his eldest daughter brought her son to her parents' house after she and her young husband could not raise the unwanted child.

Saw Kah Maung lamented:

It was a boy. Many people wanted to adopt the baby and they came to ask us. I did not want to give him away, but my wife had already given him away to someone when I was not there. Had she given the baby to another person who came later, the life of the baby would have been much better off. The person who received the baby gave us only one thousand Thai baht for the baby. Can you imagine? Only one thousand baht for a baby? If it were me, I would have not given the baby away. I was not there when my wife and daughter decided to give him away.

After his daughter gave her son for adoption, she disappeared with her husband, and since then the parents had not seen the daughter. Saw Kah Maung's second child was currently working in Bangkok and he sent money to the parents once a while, but the parents did not know what kind of job he had and when he would contact them next time. Now his wife was not strong enough to work, he was the only breadwinner in the household. Thus, the whole family's economic situation would not be expected to improve, unless his second son would contribute to the family financial situation. He had to miss his daily salary when he took their youngest son, who had

contracted with malaria, to the SMRU clinic. But they did not have other health care choice back in Leh Ger.

Now I move to his son's malaria story. Compared to the father's life-long suffering story, a temporal suffering from malaria in one's life seems less important. Yet, the chances of contracting malaria and access to receive treatment are also interconnected within the webs of sufferings in everyday violence and structural violence. According to Saw Kah Maung, his son had a fever and he vomited after he had spent seven days at a temple to become an ordained monk. He explained to me that there were two boys who died from fever at the temple. Knowing the news of other boys, Saw Kah Maung did not wait to bring his son to SMRU clinic, which was known as specialized for malaria treatment among the villagers. The son's malaria was diagnosed as a drug-resistant infection of *P.falciparum*. The father explained to me that the nurse told them that his son's malaria did not completely disappear after the standard regimen for three days, and they were afraid that his son's malaria was a drug-resistant severe malaria. Thus, they followed an order of a medic person, and commuted to the clinic to have blood tested and receive alternative antimalarial drugs everyday for a week. Saw Kah Maung gave consent for his son's participation in a clinical study to treat drug-resistant malaria.

Without elder children, Saw Kah Maung and his wife had to survive with his earning and provide for their youngest son however they could. I was not able to ask how much compensation they received from SMRU for participating in a clinical study. Given the situation, the compensation for a clinical study and transportation compensation that were paid to Saw Kah Maung and his son by SMRU would have been enough to cover his missing daily work for the week. It was a relief for the father who could not walk for long distance nor work. Of course, it is out of the question to speculate that anyone would expose oneself to malaria on purpose to get

the compensation for clinical studies. However, the benefit of participating in a clinical study, instead of simply taking anti-malarial medication at one's home in the village, should not be dismissed. The irony is that even with the compensation, it would not prevent them from contracting malaria again, nor would it improve a family's socioeconomic status.

The constrained work and life choices of migrants often places them in precarious situations where they are both more likely to contract malaria, and also less likely to receive adequate, continuous treatment. Even if the boy did not stay the temple, Saw Kah Maung may have inadvertently exposed his son to malaria through moving them to even more rural areas or working in the field. He himself was at greater risk of contracting malaria because of his work making charcoal in the deep forests. The overall story of Saw Kah Maung's family and his son with drug-resistant malaria shows how difficult it is to get treatment for malaria for the undocumented migrants, and how the inability to return for continuous treatment due to one's injuries and economic burden can lead to developing drug-resistant strains of malaria.

Paw Eh Mu's Story

Paw Eh Mu was 53-year-old Pwo Karen woman who came to the SMRU Wang Pa clinic for a clinical study follow-up. At the time, she lived in Kou Kou village which was self-administered by the Karen ceasefire group. Paw Eh Mu was originally from Kwanbee village in Burma, which is far from the border. There were only Pwo Karen in the village. When she was sixteen years old, she got married to her first husband and soon after they had a son. During our chat, Paw Eh Mu told me and my research assistant Suree that her first husband was forced to work for the Karen soldiers, who ordered her husband to collect tax from the villagers. They were the Democratic Karen Buddhist Army (DKBA) soldiers. The soldiers were not satisfied with the amount of the tax that he collected, so they came to their house and arrested her husband

and killed him outside of the village. Her husband's sudden brutal death made her and her new born son suffer. It happened only seven days after their son was born, and his umbilical cord was not gone yet. While she was talking about her first husband's story, she sniffed and wept, thus, I did not ask her further detail of their marriage.

According to several Karen female informants, in Karen tradition, people warn that women who had recently delivered babies should not do hard work, carry heavy things, and should not be subjected to any kind of shock. If they are shocked by hearing bad news, it is believed that the women will completely lose their mind. It is also important to take care of themselves by drinking and bathing in hot water. Keeping themselves warm and wearing warm clothes is necessary because during labor, women lose blood, which causes their bodies to become cold and thus vulnerable to the environment and evil spirits. This condition should be maintained for up to three months. However, Paw Eh Mu thought that the sudden, violent death of her husband was enough to shock her, and left her vulnerable to the health problems, including multiple causes of severe malaria infections.

The DKBA was infamous for collecting tax from Karen villagers for them, on top of the tax from the Burmese Administration. The opponent Karen political group, the Karen National Union (KNU), also used to draft soldiers from Karen villagers who were farmers. Both young and old male villagers were forced to join the military activity. Each family had to send at least one male to the army, and there was a fine for escaping from the draft⁹⁴. Paw Eh Mu eventually had to leave the village. One day, half of the village burned down due to an unattended fire from

94 If a family had only one male, they were exempted for the draft. One of the Karen patients at SMRU mentioned that she was happy that she did not have a son, because if it were son, there might be a chance in the future that he would be drafted to the army. According to some informants, the draft was still ongoing in some locations that were governed by the DKBA, and village leaders under the DKBA must cooperate with their orders; otherwise they would be harmed.

someone's house. I asked her if she was afraid of Burmese soldiers, but she told me that she had never seen a battle, but the life was already hard in the village. Her family did not have any farmland, so they worked on someone else's farm. If they wished to make their own farmland, they had to go somewhere else to find an open space. However, people were afraid to explore a new place because they were afraid of landmines hidden under the ground and in the grass field, which had been planted by Burmese soldiers and Karen armies. Paw Eh Mu heard that in her neighbor village, three boys found a bomb on the ground on their way to school. Not knowing what it was, they threw stones at the bomb. Unfortunately, it exploded and all the boys died.

During the ethnic conflict, food became scarce in villages, especially rice, which is a staple food for the Karen people. "I had to go to another village to buy rice. At that time, eight cups of rice (1 bag) cost 25 Thai baht. That price was too expensive for us. If we buy 4 bags, it cost 100 Thai baht. If they want to buy more rice, they had to hide the rice because if soldiers see the rice, they would take all the rice away from you." Finally, she decided to follow her parents and sisters who had already gone to a refugee camp in Thailand.

I had a child with my first husband, but the child died when he was three and half years old. I was not at home at that time, and I left my son with my mother at home. Grandmother (her mother) was cooking and the child went near the fire and the pot on the fire turned and spilled the boiling water onto him. We brought the child to the MSF⁹⁵ hospital in Mae la refugee camp, and they referred my child to Mae Sot Hospital, where he died.⁹⁶

After her son died, Paw Eh Mu married her second husband, with whom she had four children. The youngest was six years old at the time of interview. She had her youngest daughter when she was 46-years old, and the family moved out of the refugee camp to live in Kou Kou

95 Médecins Sans Frontières (MSF).

96 Interview with Paw Eh Mu, April 9, 2012.

village. Her second husband is a Buddhist Karen, but he used to be a KNU soldier⁹⁷ when he was sixteen years old. Although he was too old to join a military, some Karen veteran soldiers who knew him asked him to help them in some military activity. For Paw Eh Mu, his old comrades' request was annoying because he was the only person in her family to earn daily wage from agricultural labor work and logging. She lamented that her family including four children remained in a border village and nowhere else to go now. The children of her sisters and brothers had left for third countries via the United Nations High Commission on Refugees (UNHCR) through their registrations as refugees. Although Paw Eh Mu and her family were living in Mae La camp before 2005, they had moved out of the camp before the UNHCR started registering refugees for the relocation program. Thus, they could no longer prove their refugee status. "Life in Mae La camp was better than here, because you received food and had schools for children in Mae La. Here, we have to buy everything but we do not have our own land and need to work for someone's farm everyday to buy food."

Paw Eh Mu told Suree that she was lucky because her mother used to live in the same village in Burma with Paw Eh Mu, but she is now settled in Thailand because she could find a job at SMRU clinic in Mae La refugee camp as a lab technician. Suree's mother had been a refugee in Mae La camp, and she and her children, including Suree, were still undocumented migrants in Thailand. However, because of her mother's connection to SMRU, they were able to settle in Mae Sot and children could go to Thai schools for higher education. However, Suree's mother's case was not typical for the majority of undocumented migrants.

These three vignettes show the different kinds of violence in the everyday lives of

97 After the Shoklo Refugee Camp was attacked and burnt down by the Burmese and DKBA soldiers, many Buddhist Karen soldiers switched from KNU to DKBA. The fact that Pa Mu Sa's second husband move to Koko village, which has many Pwo Buddhist Karen and Burmese residents indicates that he also changed his military affiliation to DKBA.

Burmese undocumented migrants. Like Daw Aye Aye, Saw Kg Maung, and Paw He Mu, the majority of the undocumented migrants who were forced to move out of their Karen villages during the war settled in the border villages closer to Thailand. They occasionally have to move from one village to another to seek security if fighting started in their newly settled village. Thus, not being able to obtain their own land to cultivate in the ethnic conflict black zone, life in the borderland for undocumented migrants is precarious.

Most of them have to maintain their health in order to survive and provide food for the family, because their daily wage as a labor is not enough make any savings at all. Living in such a precarious life condition, events like losing a breadwinner and losing the ability to work due to an accident or injury significantly impact the fate of the whole family, impacting the welfare of this generation and the next.

2. Everyday Violence in the Thai-Burma Borderland

The advantages of being an anthropologist is experiencing slices of the lives of the people we study by living with them and experiencing their everyday life. However, sometimes there are physical risks that come with it. Anthropologists generally understand such risks and dangers in order to get first-hand data of people and grasp everyday experiences in a community. For instance, I expected that I might have contracted with malaria during my fieldwork, and secretly hoped so somewhere in my mind. Yet it did not happen, but something else did. There are so many uncertainties that one cannot always be prepared, even with one's best effort. When such an experience changes one's relationship with people and an institution in the fieldwork, it cannot be ignored as just an event. I describe my experience from my field note.

On October 17th, 2011, I was on my way back from fieldwork at SMRU-Maw Ker Thai (MKT) clinic. I had a very productive day collecting interview materials and felt positive about

the future of my research. It was past 4 pm when I was driving with people in a SMRU clinic van, and I was involved in a car accident. It was supposedly about an hour drive and everybody in the passenger seats seemed to have fallen asleep. Suddenly, I woke up by hearing a hiss, and saw a big truck cutting in front of us, crossing in front of our van to turn to the other lane. The next moment, I woke up with severe pains on my whole body. My left leg was under the dashboard of the van, which was crushed by the truck. I attempted to pull my left leg from the crushed dashboard with my full strength, but I could not pull it out. Other cars stopped and people started taking pictures of the accident scene. The SMRU driver, who was a Karen, went outside of the van and he seemed to be checking the condition of the van quickly. I asked people to get out of me from the vehicle and pull the truck or the van immediately. But neither of the SMRU driver nor the truck driver moved their vehicles. Soon after, the Thai police officer arrived on the scene, and he too, started taking documenting the scene with a camera. A thought of losing my left leg or my life came across in my mind. It seemed so unreal that I was involved in a car accident in the middle of the highway in Thailand.

I woke up again when my body was pulled out of the van by several standbys. The van's bonnet was completely removed from the vehicle and I saw where my body had been placed. It was a miracle that I still had all of the pieces of my body together. I was relieved to learn that I was still alive and could go to the hospital. My pair of cream-yellow-color pants was soaked in blood by severe gushes of blood from my left leg. I was taken to the Mae Sot General Hospital by an ambulance. Then, there was a long waiting period because there was only one surgeon in the entire Mae Sot town and he was performing a surgery on another patient. I ended up with having more than 50 stitches on my left leg by cutting the muscle on my calf, arterial vein behind the knee, but luckily, no bone was fractured. In the recovery room, I heard that there was another

car accident on that day around the same time I had an accident, and a small boy who was a migrant and was riding on the tractor with his father was involved in an accident. He was sent to the ER, lying next to my bed, and later pronounced dead.⁹⁸

The hospital hallway was flooded with patients on stretchers and their families, who could not afford for staying in the in-patient room (IP room). These patients were exposed to the open-air with dust, heat, and the sunlight during the daytime, and chilly air at night. As I felt sorry for the people who could not stay in the IP room, I remembered that I had heard that several Thai hospital doctors told me that migrant patients pressure the hospital capacity in the government hospitals in Thai border districts.

After spending two weeks in the hospital, I was discharged, but still needed to commute to the Mae Sot General Hospital to get my wounds dressed for another week. Every morning I went to the hospital from the house nearby⁹⁹ and accompanied by So Chi, a helper who was an old Sgaw Karen woman. We both were in the Karen traditional outfits, with Karen embroidery tunic on top and sarongs, thus, people did not doubt that I was a Karen on first glance. At the hospital, a Thai nurse was working by herself at the corner of ER room. On my first day, I was shocked when she asked me to place my leg on the steel hospital dressing table. The stainless table had cottons and surgical tapes soaked in other patients' blood, body fluids, and their dead cells. I made a face and complained that the table was "*skpok*," dirty in Thai to the nurse. The mid-age female nurse immediately got upset and shouted at me: "If it was dirty, your leg was also dirty! That is why I have to clean your leg. I don't have to do this work for you if you complain. What a fool you are! Where is your attendant? I am going to tell her that you Karens

98 After that day, I saw another body of female migrant, who was hit by a large truck just outside of the refugee camp, and the body remained on the ground under the truck in public view.

99 The SMRU Director offered his house for me to stay, because his house was located in front of the hospital and it was convenient.

cannot speak to me like that or else you cannot receive treatment here!” Completely believed that I was a Karen, the nurse harshly accused So Chi of my misbehavior. I apologized to So Chi for what happened, and she replied to me that she got used to this kind of treatment in Thailand.

The injury, followed by non-existing physical therapy and infections in the wounds, left my left leg disabled in the borderland. Dr. Nosten, the SMRU Director, told me that I should consider the cause of the accident as my karma, implying that the SMRU would not be responsible for the accident as an institution, even though the driver was hired by the SMRU. Thus, after a month of struggle, I left Thailand for rehabilitation. A year later, I went back to resume my research and I learned that the Karen male driver who was responsible for the car accident had been responsible for two more car accidents.

The physical and mental trauma from the accident, the insults and discriminations based on one’s ethnicity and citizenship, and the lack of social justice in Thailand in regards to vehicle accidents, enraged me for the meaningless suffering that I and other people had endured. The violence which took place in their everyday lives placed the vulnerable people, like undocumented migrants, to further expose them to structural inequality and discriminations in the borderland. At the same time, this experience of suffering gave me a new perspective on the everyday violence in the borderland, including threats, accusations, injuries, and deaths experienced among the Karen undocumented migrants, on top of the structural violence from the ethnic conflict.

By juxtaposing suffering stories of the researcher and the researched, my intention is not to claim that there was a solidarity between the two different parties. In fact, my positionality was always an outsider in the borderland. However, the Thai nurse’s harsh insult to me, a researcher, completely disguised as a migrant Karen by wearing the Karen outfit from top to

bottom, with her hill-tribe-looking Asian face¹⁰⁰ and her lack of Thai language skill, was linked to a larger systemic discrimination against undocumented migrants and refugees in the Thai-Burma borderland from Thai people. This episode itself shows a good example of why undocumented Karen migrants like Daw Aye Aye, hesitated to go to Thai government hospitals, and they considered the Thai hospitals as the last resort for emergency.

I also argue that deconstructing and minimizing the ethnographer's self-reflection makes it impossible to analyze the injustice and oppression that exist as stern realities. Ignoring such experiences and failure to analyze the consequences of speaking out against such injustice mean that we also turn away from suffering of the people we study. In his ethnography *In Search of Respect*, Philippe Bourgois (2003: 80) claims that "This [radical deconstructionism] subtly denies the very real personal experience of pain and suffering that is imposed socially and structurally across race, gender, sexuality, and other power-ridden categories." Therefore, it is important to examine how this unique "experience-near" opportunity has its own meaning in the ethnographic context.

3. Theoretical Perspectives on Violence and Blaming

Lockhart and others suggests that there are two dynamics in the recent ethnographies of violence (Lockhart 2008; Holms 2013). One main theoretical contribution is Paul Farmer's structural violence, of which, he claims that the hegemonic forces in the neoliberal world system and the historical backgrounds of colonialism, racism, and sexism inevitably impact the lives of the extreme poor and leave little room for individuals to experience empowerment (Farmer 1999, 2004). Farmer takes a materialist approach to violence, suggesting that "social life in general and

100 During my fieldwork in Thailand, many people commented on my face that I looked like one of their hill tribes in the country and did not look like a Japanese at all.

structural violence in particular will not be understood without a deeply materialist approach to whatever surfaces in the participant-observer's field of vision - the ethnographically visible.” (Farmer 2004: 308). By saying “materialist approach,” Farmer does not mean economic or biological. He claims that the integration of history, political economy, and biology is necessarily in an anthropological inquiry into structural violence. His structural violence has contributed to the enactment of a theoretical approach, the ethical/ moral discussions in anthropological work, as well as the methodology (Green 2004: 319).

Another main approach is the violence “that operates along a continuum that spans structural, symbolic, everyday, and intimate dimensions” (Scheper-Hughes and Bourgois 2004: 318). Nancy Scheper-Hughes refers to the term “everyday violence” to analyze normalized everyday violence that are experienced of by people in economically marginalized communities in Brazil. According to Scheper-Hughes, violence is routinely experienced in individuals' everyday life, thus, the micro-mechanisms of violence are taken-for-granted and normalized by the residents. They claim that Farmer's structural violence is a blackbox, and ethnographies should specify how structural violence operates in real lives, and how victimization is reproduced by the local discourse, as well as the historical processes and the contemporary politics of global political economy. Bourgois defines political violence as “targeted physical violence and terror administered by official authorities and those opposing.” (Bourgois 2001: 30). He suggests that the effects of racism and economic marginalization are violating fundamental human rights.

Scheper-Hughes claims that ethnographic approaches to violence should include the political economy of neoliberalism, as well as the individual and routinized experiences of everyday violence (Scheper-Hughes 1992). Her discussion of the everyday violence as a

continuum, insists that everyday life is “shaped by the historical processes and contemporary global political economy as well as by local discourse and culture” (Scheper-Hughes and Bourgois 2004: 318). Like Scheper-Hughes, Bourgois also claims that the structural violence extends and links “the embodied experience of violence to local constructions of gender, race, and individual morality” (Bourgois 2003 in Lockhart 2008: 96).

Following the Scheper-Hughes and Bourgois’ conceptualization of violence in everyday life, the ethnography of the street children in Tanzania, Lockhart also discusses everyday violence from the conjunctures between macrosocial and contemporary political economy. He suggests that the rising number of street children and orphans as a result of the high rate of adult HIV/AIDS cases should be understood within the context of the country’s macrosocial history and contemporary neoliberal global market economy, as well as the microsocial forces, such as gender inequality in a patrimonial society and specific local cultural context (Lockhart 2008).

I argue that dividing these two main approaches on violence into two poles would risk minimizing the suffering of the people. It would make a false description as if such violence were prevalent within the community because of its particular historical and local cultural contexts. This is the main reason I attempt to analyze my own suffering experience in the field, and the ways in which such experiences could explain how people suffer.

To analyze the life histories of the migrants and my own experience, I find sociologist Pierre Bourdieu’s analysis valuable. Bourdieu addresses that symbolic violence is a mechanism, that leads those who are subordinated to ‘misrecognized’ inequality as the natural order of things and to blame themselves for their location in their society’s hierarchy (Bourgois and Schonberg 2009). Referring to the term “habitus,” Bourdieu considers the hidden forms of symbolic power that maintains the hierarchy and power in normalized and routinized habitus.

Perhaps the closest to Bourdieu's analysis of symbolic violence among those theorists, Seth Holmes has taken a phenomenological approach in his study of Triqui migrant workers who come from Mexico to the United States to pick strawberries to describe how "the poor suffer." Holmes' study poses that suffering of the Triqui migrant workers emerge physically and symbolically in their body pains, injuries, and their ability to function in their families. He suggests that much of their suffering can be understood as "a direct embodiment of the violence continuum" such as segregation of labor, insult, ignorance, and torture (Holmes 2013: 102).

In my study of the Karen undocumented migrants, I have analyzed the macrostructural forces from the history of colonialism, the betrayals by the colonial administration, and the contemporary violence and power in the border zone due to social and cultural constructions of ethnicity and citizenship. In addition to these historical and contemporary political economic background, I include the micro-interactional expressions of violence on individual and institutional levels that surrounding the Karen migrants in the Thai-Burma borderland. Life histories of the migrants reveal that their experiences of suffering were broadly shared, even though the suffering was empirically and physically owned by individuals. I claim that such examples, which may seem to be extreme cases among other examples of everyday violence, are the experiences of broadly narrated as misfortunes of the poor in the Thai-Burma borderland, and a substantial change in the environment surrounding such violence is hard to believe, even if there are outreach humanitarian supports from the international societies and local nongovernmental organizations.

My suffering experience as an ethnographer in Thailand does not follow the Karen undocumented migrants' suffering patterns per se. I accept any criticism that might arise from my discussion of my own experiences of suffering and violence, which do not compare with the

magnitude of suffering that the undocumented Karen migrants have been enduring for generations. However, as I have argued, I believe that there is still a point to address the experience of an ethnographer in this place. My personal experience as a quasi-undocumented migrant by looking, and the subsequent treatment by the institutions, including the Thai police, a Thai public hospital, and the SMRU, gave a new perspective to look into the life of being the undocumented in Thailand. I came to realize that one's life in the borderland was treated as almost meaningless and valueless by the political economy of non-citizenship, despite numerous humanitarian aid from international and local agencies.

Likewise, the comments of “illegal migrants pressure the Thai hospital capacity” made by several anonymous Thai health workers and medical doctors indirectly accuse the people of their lack of abilities to pay the medical fees and to maintain health.¹⁰¹ Such accusations are institutionally strengthened by the inhumane treatment by the Thai border police on the migrants. Here, I claim that discriminations on ethnicity and citizenship also generates treatments on the targeted people and consequently normalize their misrecognition of themselves as victims.

4. Contextualizing Violence and Suffering in the Thai-Burma Borderland

Based on the life histories of eight Karen migrants around the SMRU-Wang Pa clinic, and my own experience as a fieldworker in the border town in Thailand, I claim that there are three overarching themes in the Karen undocumented migrants' experiences of suffering and multiple forms of violence. First, more than anything, the accounts of life history and narrative of interviews with Karen migrant patients at SMRU show that their experiences of suffering were derived from the consistent poverty and inequality. The tax collection by the military-governed

¹⁰¹ I became acquainted with several Thai medical doctors and nurses who worked in Thai government hospitals in the Mae Sot General Hospital and the Umphang District Hospital in 2010 through 2011. I put their status as anonymous because they made the comments our personal conversations.

administration on people who barely earn four US dollars per day from working in the field all day long is a far cry from providing enough food and pool money for emergent situations, such as health problems, not to mention education for their children. Thus, the Karen undocumented migrants' narratives on their life histories illustrated how poverty is to blame. Many Karen patient informants at the SMRU clinics also mentioned poverty as the cause of their suffering. Although the Karen people did not state why they were poor,¹⁰² some of them reasoned it was derived from generational economic inequality, that is hard to be changed in one generation.

Second, structural violence has impacted the lives of Karen undocumented migrants and refugees in the borderland broadly and over a long period of time. The colonial history of Burma, the Second World War, and the Burmese government's oppression of ethnic minority groups shapes the structurally determined violence over the people and serve as the baseline of their contemporary suffering. This structural violence forced people to leave their home villages and move to the new locations in the borderland, but the life in new places did not give the political security, economic stability, and reason to hope for a better future for Karen migrants and refugees. All of the three life histories show that the informants were relocated from their original villages at least once, and in the new places, they experienced various forms of violence that impoverished their already-poor lives. The persecution and denial of their human rights and dignity are what Farmer (2003; 2004) calls "structural violence," which is often hard to change and, to a large degree, predetermines people's choices for survival.

Third, the Karen undocumented people's experiences of violence operate on a continuum

102 One answer can be found in the Karen oral tradition of the Golden Book, which I discussed in earlier chapter. In the Karen oral tradition, the Karen stepped on the Golden Book given by their father God, and the white brother took it and hid the book from the sites of the Karen brother and the Burmese brother. Therefore, western people have knowledge and technologies to improve their lives, while the Karen remain poor (Hayami 2004).

from their historical structure and everyday context. The suffering of undocumented Karen migrants is an embodiment of multiple forms of violence. The traumatic experiences, such as human trafficking, abortion, losing family members, and various health problems can be prevalent in other similarly economically and politically conflicted societies. The conjuncture of everyday violence is interwoven within the larger context of structural violence, such as engaging in farming and forestry where landmines might be buried, and where seeking economic opportunities in Thailand poses the risk of being arrested by the Thai BPP. However, the risks are not always anticipated by the Karen migrants, as I have shown in my own experience. Everyday violence is not just due to direct physical harm from the fighting, but also to lack of choice in means of livelihood. These limited choices drive migrants to take risks such as engaging in dangerous economic activities even though there are risks of being harassed and arrested by the Thai BPP and being exposed to the harsh natural environment where they could possibly get severe malaria.

I also include the imposed discourses and interpretations of suffering by authorities among such micro logics of power. Local discourses on the “hill tribes” and “illegal migrants” on the Karen undocumented migrants in Thailand put them in the vulnerable situation at the micro-interactive scenes between the migrants and major ethnic groups in Thailand. The discrimination against ethnic minorities, who migrants, and refugees in Thailand in general come from the socio-economic status of the peoples and their lack of citizenship, education, and economic opportunities (Institute for Population and Social Research Mahidol University 2012). Consequently, the Karen themselves sometimes perceive that their fate of suffering is derived from their poor economic status and persecuted political history in Burma, as we have seen in Daw Aye Aye’s and Paw Eh Mu’s narratives on their life histories.

The SMRU Director's connotation of *karma* in the context of my accident was intended to make me and other people who were involved in accidents believe that it was derived from the person's mishaps or fate.¹⁰³ But this logic does not answer why some people keep suffering and others not. Not to mention, the lives of undocumented migrants are considered significantly less worthy of concern compared to those of legitimate citizens, such as Thai and Burmese citizens recognized by authorities in their own countries. Thus, physical violence, such as landmine explosion, murder, arrest, harassment, and accident in the Thai-Burma borderland, are normalized on individual levels within the regional political and economic context. From my personal experience, I further point out that symbolic violence, which Bourdieu has argued, often can be seen in the normalized discourses of deservingness of one's fate and misfortunes. Thus, the local cultural discourses and explanations can also be categorized as symbolic violence.

Lockhart agrees with Farmer's (2004) claim that it is hard to find individual acts of agency in ethnographies of violence. However, he also claims that while Farmer's structural violence approach effectively elucidates the links of historically constructed discrimination and neoliberalism to structural violence, it also falls into reductionism. In the structural violence approach, one ignores the fact that there are various forms of violence in everyday lives of people, and the interpretations of these violence are negotiated by individuals within the local context. Lockhart shows that street children in Tanzania live within their own logic to exert agency and occasionally partake in predator actions against other boys. Such "from the bottom" perspectives should be investigated, and it empowers the people instead of depicting them as

¹⁰³ I found that this was irony because the SMRU Director would not dare to say that it was their *karma* that pregnant women and small children die from malaria. Their lives should be saved by their best effort at any cost. My point here is not to criticize the SMRU Director's casual comment, but to use the episode as an anecdote that malaria can be intervened, while other human-caused violence may not in the borderland. It should also be noted that vehicle accidents are considered as a common violence and one of the common death causes in Thailand (Tanaboriboon and Satiennam 2004).

simply ‘hopeless’ victims. In this light, Lockhart presents an excellent case study in which he examines how we could intervene to change the circulation of violence.

Anthropologists should document the individual and collective agencies behind their subtle actions or non-actions as resistance toward violence in everyday life. Yet, I also argue that any ethnography should not be trapped in the discussions of “oppressed or agency” dichotomy. Bourgois (2003) points out that ethnographic presentations of social marginalization are “traumatized by the general public’s obsession with personal worth and racial determination” in his study of crack dealers in New York (Bourgois 2003:82). Questions such as whether there is individual agency and resistance from the Karen individual migrants toward such violence makes the real situation of fragmented borderland space simplified. From my participant-observations and interviews, I found that most of my informants experienced moving out of their original villages to escape from further violence. This was not a resistance but escape from violence. They were free to move out of the conflict zone to new places in the borderland, where access to healthcare infrastructure and natural resources were scarce. Furthermore, beyond the borderland was usually marked by the presence of the armed border police and barricades. I suggest that the agency, action, interventions, and the meanings in their actions need to be discussed with further investigations of the Karen undocumented migrants, and we must wait until fieldworkers can get more “experience-near” in the future.

5. Conclusion

The last chapter of this dissertation has discussed the violence that embodied suffering experiences of undocumented Karen migrants and political economy in the Thai-Burma borderland. I stepped back from the paradigm of malaria to see what kind of matters lead to suffering in the lives of the Karen people in the borderland. In fact, when they talked about their

life histories, they had never focused on malaria as their main cause of suffering. As we have seen in individual migrant narratives in the life history, suffering from malaria was just one of many difficult situations arising from everyday violence. Having said this, I am not saying that suffering from malaria is negligible in the context of life experiences among undocumented Karen migrants in the Thai-Burma borderland. Instead, I suggest that malaria should be discussed within the context of poverty and political economy of the ethnic conflict in the borderland.

Being in poverty makes Karen vulnerable to various forms of violence in their everyday lives. The historical context of colonization and ethnic conflicts created violence and poverty that are structured within lives of the Karen in the Thai-Burma borderland. Examples of such violence are experienced in everyday lives through fighting, imposed tax, human trafficking, drafting for military, and landmine injuries. Knowing that there are risks of such violence, however, Karen undocumented migrants still opt to move from their villages in Burma to the borderland. They are also aware of various health risks in the borderland. For instance, there are also high risks of health hazard for both newborns and mothers and various infectious diseases such as malaria. However, the dynamics and distribution of suffering are perceived by the people more as a continuum of everyday struggles rather than direct physical violence.

Through my personal accident experience in my fieldwork, I also suggested that everyday violence that includes discrimination against migrants by Thais and Burmese, discourses and cultural explanations of how “deserving” a person is, and lack of justice also indirectly affects the Karen undocumented migrants’ access to care, and limits their ability to question the injustice and unfair treatment by various authorities surrounding them. While we need to be careful when we analyze social suffering by juxtaposing anthropologists’ own

suffering experiences along with our informants' experiences, I have come to a conclusion that the bodily experience that one encountered as a fieldworker and embodied suffering were not negligible. Although I admit that this genre still needs more theoretical discussions, the embodied experiences and analytical findings should have its own space for an ethnography of accident.

CONCLUSION

The main objective of my dissertation was to investigate how undocumented Karen migrants and international doctors experience their everyday lives and multidrug-resistant malaria (MDR) in the borderland. The borderland is both a place of danger and a location of exploitation. Exploitation is not necessarily negative. Both the Karen and medical practitioners use the borderland to achieve personal goals. First, the Karen utilize the borderland to gain access to healthcare modalities that they do not have access to in their villages in Burma. Traveling into borderland, therefore, gives them hope for medical treatment to cure them of illnesses that plague in their daily life. In so doing, it also places them in a position of precarity and danger by exposing them to military conflict, violence, other illnesses, etc..

Previously known as an ethnic conflict area, or “black zone,” the Thai-Burma borderland has been a political place. Some of the Karen villages in Burma in the borderland are located in the black zone, where the foreign humanitarian aid was forbidden by the Burmese government. The black zone and the Thai-Burma borderland exist in spaces where people tactically negotiate their rights to live for everyday survival. By receiving humanitarian care and health interventions for malaria at local NGO hospital and the SMRU clinics, which are collaborating in global health task force for controlling the multidrug-resistant malaria (MDR) in the cross-border regions, undocumented Karen migrants became the subjects of global health interventions. As a result of being patients or study subjects in the global health interventions, many of the Karen in the borderland now have come to experience more biomedical interventions, and they have been encouraged to do so by receiving messages from the clinic staff.

Patienthood and Biological Citizenship in the Borderland

Global health interventions for malaria situated undocumented Karen migrants as liminal

subjects in myriad ways. That is, they are at risk of suffering from MDR malaria infections, but at the same time they have been expected to be responsible to recognize symptoms of malaria, health risks, and to find the appropriate biomedical facilities to receive diagnostic tests and treatments. I argued that these expectations situate the Karen under an biomedical gaze, especially when Karen patients presented themselves at the SMRU clinics. Without these medical reasons, undocumented Karen migrants are considered illegal, temporary migrants in Thailand. Therefore, their medical reasons presumably provided them a temporary quasi-legitimate status to cross the border and travel within the borderland without being questioned by Thai authorities. From interviews with Karen patients at the SMRU clinics, I also found that some undocumented Karen migrants further interpreted that enrolling in drug studies at SMRU clinics would maintain their status as patients or malaria sufferers, and at the same time, it would sustain their healthcare access at the biomedical facility.

However, as I discussed in my dissertation, a key outcome for the undocumented Karen migrants is, ironically, documentation through *lema*. Adriana Petryna (2003) discusses biological citizenship arguing that their access to health care is legitimized by their victimhood of disease and disability based on the nuclear disaster. Petryna claims that Chernobyl survivors have obtained biological and medico-legal knowledge to keep their pharmaceutical access and social benefits. I expanded Adriana Petryna's concept of biological citizenship and applied it to the patienthood of undocumented Karen migrants in the Thai-Burma borderland. This correlation between individual identity, geographical location, and illness ties to their justification of their rights to receive the humanitarian aid from international organizations and medical specialist. I found that some undocumented Karen migrants who were enrolled in clinical studies at the SMRU clinics showed me their *lemas* as if the records were their legal documents. Thus, I

concluded that *lema* was a proof of their biological suffering, and a record of patienthood, which confers a legitimate biological status in the borderland.

Petryna noted that because of the lack of universal ethical standards in clinical trials, and unequal distribution of the health care access, patients who are desperate to continue to receive care tended to rely on provided clinical opportunities, which do not give participants many options of choice. Despite the limited health options, the clinical trial opportunities provide agency to patients who exercise the biological rights and claim entitlement for biomedical opportunities. Whyte et al (2013)'s study in ARV trials in Uganda discusses more nuanced patienthood by calling it "clientship." According to Whyte and other scholars, ARV trial patients are expected to be cooperative and responsible to comply with the HIV/AIDS clinic's orders in order to keep their access to the life-saving drugs. To do so, they adapt a new patient role as a client, who understood the patient's responsibility and benefits, rather than enacting their rights and entitlement.

An important question to consider is whether undocumented Karen migrants have developed a notion of personal agency to negotiate treatment options and compensation for their trial participation at the SMRU clinics. Karen patients have not developed agency or any visible resistance to biomedical interventions, at least on a superficial level. However, from my analysis on some compliant Karen patients and the embodied values attached to *lema*, I claim that Karen patients negotiate their continued presence and their access to receive health care in the borderland by attending the SMRU clinics, which provide them a temporary justification and refuge as biological suffers.

Despite the biomedical opportunities provided by the SMRU, however, these opportunities also further marginalize the undocumented Karen population by putting them into

public health discourses of biomedical responsibilities and a biological reason of genetic vulnerability, noting G6PD deficiency. Not to mention, the black zone without humanitarian care exposes them to human conflicts and various forms of violence in their everyday life. Through their biomedical experiences at the SMRU clinics, undocumented Karen migrants become malaria patients, whose political illegality within the Thai internal border security is temporary and ambiguous.

In addition to undocumented Karen migrants, the Thai-Burma borderland also provides international medical doctors at the SMRU clinics an opportunity to gain research access while also having a direct and positive impact on vulnerable populations experiencing humanitarian crisis. International doctors working on clinical trials at the SMRU are able to capitalize on the precarious and liminal space in the borderland that offers easier ethical clearances for pharmaceutical and clinical trials for MDR malaria. Doctors were, therefore, able to provide pregnant women and small children with new treatments that they would be prohibited to administer in clinical trials on other populations governed by stricter ethical guidelines and oversight. Without crossing the international border or stepping into the military conflict zone, international medical doctors at the SMRU were able to cultivate their professional career goals, and at the same time, satisfy their humanitarian aspirations to save the lives of undocumented Karen migrant patients.

The picture of global health collaborators in malaria control in the Thai-Burma borderland illuminates diverse players within a larger network that includes local governments and NGOs, the WHO, the Global Fund, Roll Back Malaria (RBM), the European Union, philanthropic organizations such as the Bill and Melinda Gates Foundation, the British-based Wellcome Trust, in addition to academic collaborators and pharmaceuticals as Malaria Venture

and GlaxoSmithKline. This neoliberal restructuring of global health praxis also facilitates the cosmopolitan milieu in which international doctors operate. Without multilateral public-private practices (PPPs), doctors would not be able to develop technological innovations to control MDG malaria parasites.

Similarly, the liminality of the Thai-Burma borderland also gives various opportunities to local Karen practitioners as well. By practicing biomedicine, they can travel beyond checkpoints by riding in vans marked with the international research institution's emblem, acting as biomedical brokers between international doctors and Karen patients. The duality of their status also emerges at spaces they travel. Inside the SMRU clinics, they become part of the cosmopolitan community. However, once they leave the clinics, they become one of the numerous undocumented Karen migrants, who they encounter daily at the SMRU clinics.

Cultural Discourses of Malaria and Political Economy

Global health and epidemiological discourses stress that the MDR malaria in the Thai-Burma borderland could be a public health threat to the population in resource-deprived countries in Africa, where nearly ninety percent of the world malaria cases occur each year. Thus, the SMRU international doctors and global health partners often used the analogy of "time is ticking" or "we are running out of time" to fight against malaria parasites in order to stress the urgency and importance of their interventions. However, such local narratives on the cross-border populations and global discourses on MDR malaria have not taken into account of people's experiences, including patients and health practitioners. Nor have they examined how such global health discourses impact their health interventions at the local clinical setting.

By examining malaria experiences among undocumented Karen migrants, I have argued that MDR malaria is a result of the political economy of the borderland in the web of the political

economy of the cultural border politics in the borderland, as well as the global health and a wide range of social suffering in the borderland. In such social and political environment, experiences of malaria were often normalized as an inevitable illness among the poor, who carried many health illnesses, other than malaria. I claim that Malaria is not just one health problem to be added to a broader social suffering among the Karen migrants; the disease perpetuates through their suffering experiences in every aspect of the borderland space.

At the patient level, malaria is experienced among the Karen undocumented migrants through everyday life activities and biomedical interventions. Narratives of illness among patients indicated that undocumented Karen migrants often found that the disease was prevalent in the borderland, and that it made poor migrants poorer. People were well aware of malaria symptoms, such as fever, chill and headache, and in some severe cases, convulsion and coma among small children. They also knew the biological explanation of malaria causality; that is, malaria is caused by a bite of mosquito, and thus, they should avoid mosquito bites by using preventive measures, such as insecticide-treated mosquito net use.

However, what I have found is that patients' narratives indicated that individuals came to understand their illness episode by carefully considering the place, time, activities that they engaged in the past retrospectively. Thus, conducting a quantitative survey would have given a superficial explanation to the malaria etiology among the cross-border Karen migrant population in Burma.

Unlike HIV/AIDS and tuberculosis, global health discourses on malaria neglect an investigation of the social context and moral implications of their health-seeking behaviors (Kamat 2013; Packard 2007). This is partly because malaria is considered a biological disease and it is largely impacted by the nature-human interactions. There are rigorous investigations of

the mechanisms of an emergence of drug-resistant malaria parasites from the parasitological side (Barnes and White, 2005; Ter Kuile et al. 1992; Thu et al. 2017; WHO 2010). However, virtually no social science studies have investigated how the epidemiological challenge is perceived from the local perspectives. In this dissertation, I attempted to elucidate how epidemiological discourses on the MDR malaria and international humanitarian calls for interventions for the Karen undocumented migrant populations has impacted health interventions for malaria among in the Thai-Burma border.

The Biomedical Humanitarianism on the Move

After I left my fieldwork site in Thailand, I contacted Dr. Khin Maung Lwin, a Burmese medical doctor who used to work at the SMRU main office in Mae Sot. He told me that the SMRU opened a new office in Yangon, the previous capital city of Burma, thus, he moved to the SMRU office in Burma from the Mae Sot office in Thailand, and then traveled through the eastern regions of Burma. It was clear that SMRU shifted their focus from waiting to catch malaria cases at clinics in Thailand to directly intervening villages in Burma through surveillance of parasites by mass screening. Dr. Khin confirmed with me that Thailand was no longer a malaria-burdened place: malaria researchers and organizations need to go deeper inside Burma to find more patients and parasites.

The political environment in Burma has been changing after the general election in Burma in 2015; however, as the recent human rights abuse on the Rohingya populations in the Arakan State in Burma showed that ethnic minorities in Burma are still in vigilant situation. In such ethnic conflict zones, or the “black zones” defined by the Burmese government, humanitarian relief activities including health interventions by global health agencies are the only resort for political refugees and other migrants.

Many undocumented Karen migrants and refugees still hesitate to go back to their villages in Burma, because of the Burmese army's harassment on the Karen villagers in the Karen State in Burma. Questions such as 'what activities do you think caused your sickness?' and 'how did you treat your illnesses at home?' may have information that Karen migrants do not want to share with outsiders even in the clinical setting. In areas where ethnic conflicts have been affecting people's lives, for safety reasons it is not always warranted to talk about where they had been and what they have done, assuming there were soldiers receiving treatment at the clinic among other patients. Thus, I suggest that future research which is conducted in the village setting should clarify this interpretive bias.

The Thai-Burma borderland symbolizes the ambiguity of state governance and cultural politics of citizenship. Undocumented Karen migrants do not officially belong to any nation state, thus, their existence in the border space becomes both epidemiological and humanitarian subjects within the global health paradigm. Malaria in the Thai-Burma borderland is only one social problem among many other sufferings among undocumented Karen migrants experience as a stateless population. Regardless, malaria interventions have become an amalgam of social change in the borderland because of the perceived universal values in biomedicine, and global aspirations for the science and technology, which consequently confers people who involved in the project with new identities of the citizens in the borderland.

Appendix A - Interview Methods

The majority of my open-ended interviews with patients were conducted during their waiting time at the clinics, thus, the length of each interview varied between twenty minutes to one hour and forty-five minutes. I obtained verbal informed consent from each interview participant. I found that this way of obtaining a consent was appropriate, because it would not be mistaken by patients as a clinical study. At SMRU, participation in clinical study required informed consent on the paper form with a thumb-print. I and my research assistant prepared a consent and read it out loud in front of each patient. Another reason of using verbal informed consent was because the majority of patients could not read and write. Most of interviews were tape-recorded, then transcribed from Karen or Burmese to English by my research assistants. When I could not use tape-recording, I took notes and after I came back from the clinics, I wrote up the interviews and my observation notes from my fieldnote in the SMRU doctor's office.

I had four research assistants in total at a time. I trained only one research assistant, who was my main, and she collected more than half of the interviews of Karen patients. Although she had only a high-school diploma from an international NGO high school in Mae La camp, she was fluent in Sgaw Karen, Thai, Burmese, and also comprehended Pwo Karen and English well. Ages of other three research assistants were between 19 and 25, they could speak either Burmese, Sgaw Karen, or Thai. Because of the language limitation, I have to admit that there is a bias in selecting informants. I also received translation check from a senior Sgaw Karen staff in order to minimize the discrepancy in translation, and we together listened to some of the tape-recorded interviews.

Appendix B - Karen Ethnomedical Terminologies for Various Illnesses

acute headache = chaa taleaa

acute stomach pain = ker lee (air) che (pain)

bad blood = thwee (blood) t'gay bah (not good)

chill (rigor) = a'tanoaa

coma = tabinada

constant fever = takoto pailiaa or takoto pagyiliaa

dizziness = ku'muaa

fever = taku?

flu fever = kumuku' or taba tamubaa

headache = kotakichaa

jaundice = to'boaa

malaria = tanyaa-ghoo-kha

migraine = kotakichaa and atakopaloaa

paralyzed body due to stroke = ker lee piya

rollback fever = to (up) loo (down)

stomach ache = hapechaa

vomit = boa

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