



**FACTORS ASSOCIATED WITH IMMUNIZATION STATUS
OF MYANMAR MIGRANT CHILDREN IN
CHIANG RAI PROVINCE, THAILAND**

SHIN MOE OO

**MASTER OF PUBLIC HEALTH
IN
BORDER HEALTH MANAGEMENT**

**SCHOOL OF HEALTH SCIENCE
MAE FAH LUANG UNIVERSITY**

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**THIS THESIS IS A PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE DEGREE OF
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Thesis Title: Factors Associated with Immunization Status of Myanmar Migrant
Children in Chiang Rai Province, Thailand

Author: Shin Moe Oo

Examination Committee:

Kreingkrail Prasert, Ph. D.	Chairperson
Assistant Professor Pamornsri Inchon, Ph. D.	Member
Assistant Professor Peeradone Srichan, Ph. D.	Member
Assistant Professor Soontaree Suratana, Ph. D.	Member

Advisors:


.....Advisor
(Assistant Professor Pamornsri Inchon, Ph. D.)


.....Co-Advisor
(Assistant Professor Peeradone Srichan, Ph. D.)

Dean:


.....
(Assistant Professor Wipob Suttana, Ph. D.)

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Shin Moe Oo

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Author	Shin Moe Oo
Degree	Master of Public Health (Border Health Management)
Advisor	Assistant Professor Pamornsri Inchon, Ph. D.
Co-Advisor	Assistant Professor Peeradone Srichan, Ph. D.

ABSTRACT

Myanmar migrant children in Thailand have consistently shown lower immunization coverage compared to their Thai counterparts, leaving them vulnerable to vaccine-preventable diseases. Despite the growing migrant population and ongoing public health concerns in border regions, limited evidence exists regarding age-appropriate immunization among Myanmar children in Chiang Rai, an important migration corridor along the Northern Thailand–Eastern Myanmar border. Thus, this study aimed to assess the immunization status and identify its associated factors among children from Myanmar migrants in Chiang Rai province, Thailand. A cross-sectional study was conducted to collect data from Myanmar migrant caregivers aged 15 years and above, who have children under 7 years of age, living in Mueang District and Mae Sai District of Chiang Rai province using a validated questionnaire through face-to-face interviews. Chi-square or Fisher's Exact tests and binary logistic regression were used to identify factors associated with incomplete age-specific immunization, with a significance level of p-value less than 0.05.

Among 423 children analyzed, 91 children (21.5%) were found to be incompletely immunized according to their age-specific schedule. Regarding intrapersonal-level factors, over half (57.0%) were boy, 87.2% were born in Thailand, 46.3% were aged above five years, and the majority of children (82.3%) were covered by Thai health insurance schemes. Multivariable analysis identified six significant predictors of incomplete immunization. Children without birth registration in Thailand (aOR = 9.52; 95% CI: 3.74–24.27), children without health insurance (aOR = 14.03;

95% CI: 6.45–30.54), children with return migration history (aOR = 19.35; 95% CI: 8.48–44.13), caregivers with negative peer practice (aOR = 8.09, 95% CI: 1.47–44.54), caregivers mentioning time barrier (aOR = 4.09, 95% CI: 1.20–13.94), and those mentioning financial barrier (aOR = 7.07, 95% CI: 1.67–29.91) were significantly more likely to have incomplete immunization.

This study revealed a moderate prevalence of incomplete immunization (21.5%) among Myanmar migrant children, which was statistically significantly associated with factors across all three levels of the modified socio-economic model: intrapersonal, interpersonal, and institutional levels. At individual level, caregivers should be encouraged to have their children registered at birth in Thailand, enrolled in appropriate health insurance schemes, and keep immunization records when traveling between Thailand and Myanmar. Community outreach activities and migrant health volunteer training are also recommended to promote practice among peers, reduce access related barriers such as time and money. Moreover, digital tracking system for immunization records and cross-border collaboration between Myanmar and Thailand should be developed to maintain consistent vaccination records and reduce gaps in immunization coverage among migrant populations.

Keywords: Chiang Rai, Thailand, Immunization Status, Children, Myanmar, Migrants, Factors.

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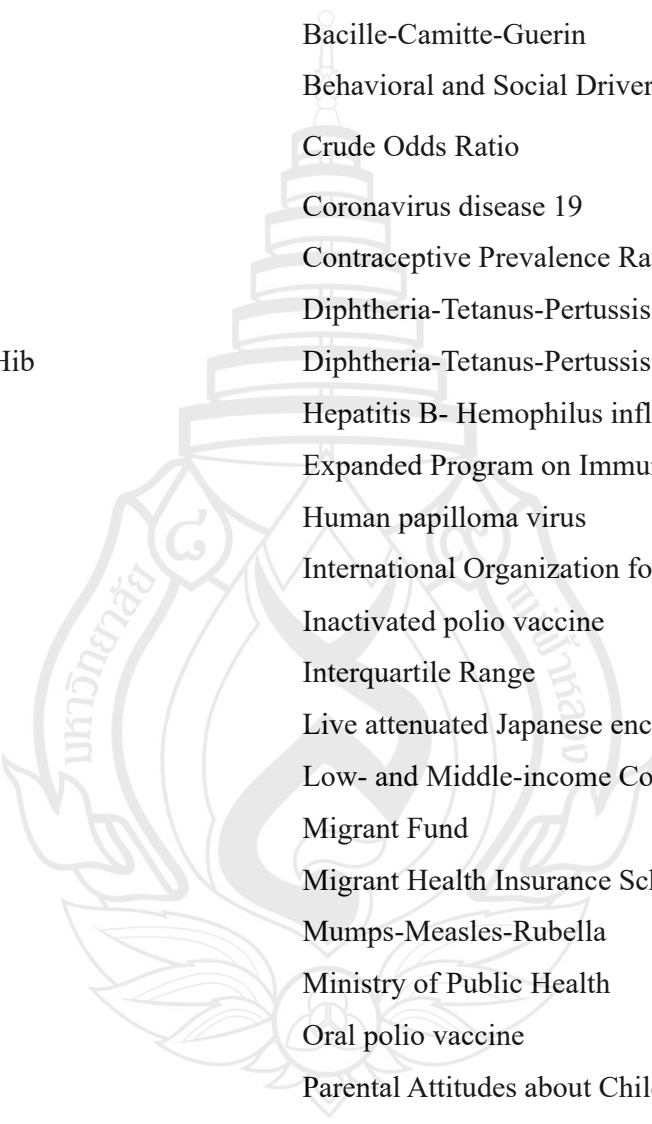
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ABBREVIATIONS AND SYMBOLS



aOR	Adjusted Odds Ratio
ASEAN	Association of Southeast Asian Nations
BCG	Bacille-Camitte-Guerin
BeSD	Behavioral and Social Drivers
cOR	Crude Odds Ratio
COVID-19	Coronavirus disease 19
CPR	Contraceptive Prevalence Rate
DTwP	Diphtheria-Tetanus-Pertussis (whole cell)
DTwP-HB-Hib	Diphtheria-Tetanus-Pertussis (whole cell)- Hepatitis B- Hemophilus influenza vaccine
EPI	Expanded Program on Immunization
HPV	Human papilloma virus
IOM	International Organization for Migration
IPV	Inactivated polio vaccine
IQR	Interquartile Range
LAJE	Live attenuated Japanese encephalitis vaccine
LMICs	Low- and Middle-income Countries
M-Fund	Migrant Fund
MHIS	Migrant Health Insurance Scheme
MMR	Mumps-Measles-Rubella
MOPH	Ministry of Public Health
OPV	Oral polio vaccine
PACV	Parental Attitudes about Childhood Vaccines
SD	Standard Deviation
SDG	Sustainable Development Goal
SEA	Southeast Asia
SEM	Socio-Ecological Model
SPSS	Statistical Package for Social Sciences

ABBREVIATIONS AND SYMBOLS

UNICEF	United Nations Children's Fund
VPD	Vaccine Preventable Disease
Rota	Rotavirus
WHO	World Health Organization
95% CI	95% Confidence Interval



CHAPTER 1

INTRODUCTION

1.1 Background and Rationale

For centuries, humans have looked for ways to protect individuals against deadly infectious diseases. Upon Edward Jenner's successful demonstration of immunization against small pox, the World Health Organization (WHO) established the Expanded Program on Immunization (EPI) to develop immunization programs throughout the world in 1974 (1). Thailand officially adopted it in 1977 (2). Immunization can be classified into active, which uses vaccines to stimulate an individual's immune system to produce long-lasting protection and passive, which provides immediate but short-term immunity by preformed antibodies, such as immunoglobulin (3). Routine immunization schedules are based on active immunization. Moreover, catch-up immunization strategies are used to vaccinate children who have missed recommended vaccines, especially important among migrant populations (4). Immunization not only protect against infectious diseases but also prevents physical and intellectual disabilities among children, so that they not only survive but also thrive (5).

Immunization prevents 3.5 million to 5 million deaths every year (6). However, in 2023, of the total 128 million children globally, approximately 14.5 million children (18%) missed out on any vaccination, known as zero-dose children (7). While high-income countries often achieve immunization coverage rates above 90%, low- and middle-income countries (LMICs) continue to face significant challenges due to socio-economic disparities, healthcare access barriers, conflicts, displacement, and migration (7). In Southeast Asia (SEA), Myanmar's EPI, covering 12 vaccine preventable diseases, saw the severe fall in 2021 due to the COVID-19 pandemic and political conflicts (9). The coverage for many essential vaccines in EPI program dropped below 50% (10). As a result, Myanmar children particularly in border and conflict-affected areas face significant gaps in protection against preventable diseases. In contrast,

Thailand's EPI has markedly high national coverage, being maintained around 90-95% for all vaccines (2). It contains 13 vaccine-preventable diseases with multiple booster doses during preschool and school-age periods, whereas Myanmar's routine immunization schedule mainly emphasizes primary series vaccination during infancy and early childhood (8). Despite Thailand's strong coverage, outbreaks of diseases such as measles and pertussis still occur, particularly in border areas where there are high concentrations of migrant populations, including those from Myanmar (11, 12).

Thailand serves as a cross-border migration hub for many working-age migrants and their accompanying dependents. As of 2023, it hosts approximately 4.9 million migrants (including the accompanying dependents), primarily constituting Myanmar nationalities at almost 60% (13). From 2022 onwards, Chiang Rai has become an increasingly popular destination for Myanmar due to several push and pull factors such as geographical proximity, increasing labor market demand, and the existing migrant network (14). There are about 17,000 registered Myanmar migrant workers residing in the Chiang Rai province (15). However, the population of accompanying child dependents in the region is unknown. Studies pointed out that Myanmar migrant women have low Contraceptive Prevalence Rates (CPR) and an unmet need for family planning due to limited access to family planning resources (16). Accordingly, Myanmar migrant families can be expected to contribute to the increasing yet the invisible number of migrant children in Thailand. Furthermore, the 2021 military coup has exacerbated parents' concerns regarding their children's safety, education, and healthcare. These situations urge many Myanmar families to cross borders into Thailand with their child dependents (17).

According to the United Nations Children's Fund (UNICEF), nearly half of the un- and under-vaccinated children are from the countries affected by conflicts and migrated across borders into neighboring nations. They frequently encounter significant barriers to immunization. The failure to vaccinate these children not only threatens their lives but also poses a potential threat to national and global health security since vaccine-preventable disease outbreaks can spread quickly, transcending borders and leading to larger-scale public health crises (18). Studies have consistently revealed that Myanmar migrant children in Thailand have lower immunization coverage compared to their Thai-born colleagues (19–21). Several barriers prevent Myanmar migrant

children in border areas from accessing routine immunization, including a lack of documentation, language barriers, financial constraints, and lack of health insurance (21). In Thailand, access to immunization services is influenced by the individual's legal status and enrollment of children into health insurance schemes. Documented migrant workers can purchase health insurance for their children from the Ministry of Public Health's Migrant Health Insurance Scheme (MHIS), at a cost of 365 baht per year for children under 7 years, and 1,600 baht for those who aged 7 to 14 years (22). However, undocumented migrants and their children are often excluded from such schemes due to legal and financial barriers (23). Although alternative coverage is available through non-governmental initiatives such as the Migrant Fund (M-Fund), the uptake remains limited due to awareness gaps, language barriers, and mobility (23). In addition, misinformation and vaccine hesitancy further contribute to lower immunization rates among this population (21).

The fact remains that many migrant children still are deprived of age-specific vaccination, which is a public health issue not only for the migrant communities themselves but also for the surrounding Thai communities (18, 20). However, most of the studies on the migrant population in Thailand are focused on the working-age group and there is a dearth of studies and statistics on migrant children in Thailand at any given time. Somehow, in the context of migrant children, previous studies were set in younger age groups (under 2 years), only in certain regions like Tak province and Bangkok, and over a decade ago (19–21). Recently, there has been little attention to older migrant children population in newly popular destinations like Chiang Rai. Given the undocumented status of many of these children and their parents, these children are at risk of missing vaccinations, and there seem to be many more determinants that should be investigated to find out the barriers to immunization.

This study aims to assess the immunization status of Myanmar migrant children (aged under 7 years) and to analyze its associated factors according to Socio-Ecological Model (SEM) including individual, interpersonal, and institutional level factors. The findings from this study will fill both the geographical and temporal gaps in the existing knowledge about the immunization status and its potential determinants among the vulnerable Myanmar migrant children in Chiang Rai province, Thailand. These valuable insights are essential for health professionals and policy makers to design the

targeted and modern interventions that would align with the WHO's Immunization Agenda 2030- to leave no one behind, in any situation or at any stage of life (5). Eventually, the increasing immunization rates will help global efforts to achieve Sustainable Development Goal (SDG) 3.2, which aims to end preventable deaths of newborns and children under five by 2030, SDG 3.8, which promotes universal health coverage, and then SDG 10, which focuses on reducing health inequities among vulnerable populations, including migrants (24).

1.2 Research Questions

1.2.1 How is immunization status of Myanmar migrant children aged under 7 years in Chiang Rai province, Thailand?

1.2.2 What factors are associated with the immunization status of Myanmar migrant children aged under 7 years in Chiang Rai province, Thailand?

1.3 Research Objectives

1.3.1 To estimate the immunization status of Myanmar migrant children aged under 7 years in Chiang Rai province, Thailand.

1.3.2 To identify the factors associated with the immunization status of Myanmar migrant children aged under 7 years in Chiang Rai province, Thailand.

1.4 Research Hypotheses

1.4.1 Intrapersonal level factors are significantly associated with immunization status of Myanmar migrant children aged under 7 in Chiang Rai province.

1.4.2 Interpersonal level factors are significantly associated with immunization status of Myanmar migrant children aged under 7 in Chiang Rai province.

1.4.3 Institutional level factors are significantly associated with immunization status of Myanmar migrant children aged under 7 in Chiang Rai province.

1.5 Study Scope

This study focused on examining the immunization status and its associated factors among the Myanmar migrant children under 7 years old in Chiang Rai Province, Thailand by using a quantitative cross-sectional study design. By using the comprehensive framework of SEM, investigation was made into various determining factors across multiple levels such as intrapersonal, interpersonal, and institutional level, encompassing socio-demographic characteristics, caregiver's knowledge, attitudes, and perceived barriers about immunization, family and peers' norm, social networks, healthcare provider practices and healthcare access-related barriers affecting the immunization uptake. Data were collected using a structured questionnaires adopted from relevant previous studies and validated tools, before analyzing statistically to determine the relationship between these theorized factors and the immunization status. The study wants to provide evidence-based insights for targeted public health interventions and policy recommendations to promote immunization status among Myanmar migrant children in Chiang Rai.

1.6 Benefits of the Study

This study assessed the immunization status of Myanmar migrant children, identifying whether they are completely immunized or incompletely immunized. Incomplete immunization increases children's susceptibility to vaccine-preventable diseases, potentially leading to outbreaks within the community. Firstly, by obtaining reliable data on immunization status of Myanmar migrant children, this study can provide valuable insights to help estimate the children's susceptibility to vaccine-preventable diseases (VPD) and risk of disease outbreaks in the community. Secondly, by identifying the factors associated at different levels, the study can highlight specific challenges contributing to under immunization among migrant communities to inform evidence-based interventions. Finally, the findings are instrumental for health professionals and policymakers in designing targeted, innovative interventions that align with SDG 3.2 (end preventable deaths of newborns and children under five by

2030), SDG 3.8 (promoting universal health coverage), and SDG 10 (reducing health inequities among vulnerable populations, including migrants).

1.7 Operational Definition

Myanmar migrants refer to individuals originating from Myanmar who migrated and resided in Thailand for the purpose of work, family settlement, or other socioeconomic reasons. In this study, the term specifically refers to Myanmar migrant caregivers and their children living in the study area during the period of data collection.

Myanmar migrant children refer to children of Myanmar migrants who are aged under 7 years old and currently living in Chiang Rai Province, Thailand, irrespective of their birth country. In this study, Myanmar migrant children were the subjects of interest.

Myanmar migrant caregiver means Myanmar migrant aged above 15 years who is primarily responsible for the care, well-being, and decision-making regarding the health of a child. Mothers were prioritized as the primary respondents among caregivers. In this study, the caregivers were categorized into mother, and others (father, grandparents, relatives, etc.)

Immunization refers to the kinds and doses of vaccines, which are necessary for children aged under 7 years according to the Expanded Program on Immunization (EPI) in Thailand.

Immunization status refers to whether children aged under 7 years have received recommended vaccine doses according to their respective ages or not. In this study, immunization status was assessed according to the routine EPI schedule of Thailand. It was categorized into two: complete and incomplete immunization.

Complete immunization means the child received all age-appropriate vaccines according to Thailand's EPI schedule at the time of the survey, based on documented evidence such as a pink book or official immunization records.

Incomplete immunization means the child received some, but not all recommended vaccines for their age. This includes children who missed at least one

dose of vaccines, based on documented evidence. Children with the status of lost or missing document evidence also fall under this category.

Age of child refers to the number of months or years a child has lived since birth. In this study, it was recorded in months or years as a continuous variable.

Sex of child refers to the biological sex of the child as identified by their respective caregiver. It was categorized as boy or girl.

Child's education means the level of education the child was obtaining at the time of data collection. It was categorized as ordinal scale into no schooling, preschool/ kindergarten, or primary school.

Place of delivery means the birth country and the birth setting of the child. This was categorized into Myanmar or Thailand, and home-based or health facility-based.

Birth registration refers to the official recording of a child's birth by the Thai civil registration authority (usually the district office), resulting in the issuance of a legal birth certificate. In this study, it was self-reported by the caregiver. The responses were recorded as "Have" and "Don't have".

Child's health insurance refers to whether the child is covered by any health insurance scheme such as Universal Health Coverage (also known as the 30-baht scheme), Migrant Health Insurance, Social Security Scheme, or M-fund. It was categorized as either "Have" or "Don't have."

Return child migration history refers to whether the child had been sent back to Myanmar for a duration of more than one year at any time in the past. The response was recorded as a dichotomous variable: yes or no.

Age of caregiver refers to the number of months or years a person has lived since birth. In this study, it was recorded in months or years as a continuous variable.

Sex of caregiver refers to the biological sex of the participant as identified by themselves. It was categorized as man or woman.

Caregiver's education refers to the status of formal education completed by the participant. It was categorized as no formal education or educated.

Caregiver's occupation refers the working status that the participant or caregiver was having at the time of study. This was categorized as unemployed or employed.

Ethnicity refers to the participant's self-identified affiliation with a specific ethnic group based on shared cultural, linguistic, or ancestral characteristics. In this

study, the participant provided their ethnicity by choosing from the predefined categories based on common Myanmar ethnic groups in Thailand: Bamar, Karen, Shan, Mon, or others.

Religion refers to a particular system of faith or worship of the participant, which was categorized as Buddhist, Christian, Islam, or others.

Pace of origin refers to the geographical area within Myanmar where the caregiver was residing before migrating to Thailand. It reflects the caregiver's last permanent or habitual residence in Myanmar, based on the caregiver's self-report. Responses was be categorized according to Myanmar's administrative divisions: central regions (Mandalay division, Magway division), South-western regions (Yangon division, Rakhine state, Ayeyarwady division), and North-eastern regions (Shan, Karen and Mon States).

Duration of stay in Thailand means the duration of time that the participant has been living in the current Thai community. It was be measured in years or months as a continuous variable.

Family income means the monthly total earnings of the child's family, measured in Thai Baht (self-reported).

Number of children means the total number of children in the family or household registration, which was be recorded as a continuous variable.

Planned child return to Myanmar refers to caregiver's stated plan for the migrant child in the household to send back to Myanmar at any time in the future. It was categorized as a dichotomous variable: yes or no.

Legal status refers to whether the participant has valid legal documentation to reside and work in Thailand. It was the participant's self-report and recorded as documented or undocumented.

Knowledge on immunization is defined as knowing and understanding of caregivers about the immunization schedule, vaccine preventable diseases, and vaccine side effects. In this study, knowledge was be measured by a structured questionnaire adopted from the previous study. Each question produced a separate score and the total score contributed to the overall assessment of knowledge which was categorized as low, moderate, or high knowledge.

Attitude on immunization refers to caregivers' beliefs, trust, and perceptions regarding the importance and effectiveness of vaccines. It also assessed their trust in medical professionals and confidence in vaccine schedules. Attitude was measured using a structured questionnaire adopted from the Parental Attitudes about Childhood Vaccines (PACV) tool. The score was categorized as negative or positive attitude.

Peer's practice refers to caregiver's perception of whether other parents regularly practice child immunization. Other parents include friends, people at work and people in the neighborhood who the respondent may not have close social ties to. It was measured by a questionnaire adopted from the WHO's Behavioral and Social Drivers of Vaccination (BeSD) tool and categorized as yes or no.

Family support refers to caregiver's perceived agreement and practical support from family members in facilitating child immunization. Family includes people with opinions which the participant would listen to or feel some degree of pressure to take notice of. It was measured by a questionnaire adopted from the WHO's BeSD of Vaccination Tool and categorized as yes or no.

Religious leader's norm refers to the perceived influence of religious leaders in shaping caregivers' decisions regarding childhood immunization. Religious leaders include priests, clerics, imams, monks and others in similar roles. It was measured according to WHO BeSD tool and categorized as yes or no.

Community leader's support refers to social norms or perceived support from community leaders for immunization. Community leader refers to people who represent a neighborhood or subgroup of people e.g., migrant community leader, village headman. It was measured by a questionnaire adopted from WHO's BeSD Tool and categorized as yes or no.

Recommendation from Thai refers to caregiver's report of receiving advice or encouragement from Thai friends regarding child immunization. It was measured by questionnaire adopted from WHO's BeSD tool and categorized, yes or no.

Information sources refers to caregiver's reported channels through which they received information about child immunization, such as close contacts (family or friends), residence members or neighbors, migrant community networks such as migrant health volunteers, or social media. These were measured through caregivers'

responses to structured questions adjusted and adopted from the previous studies. The responses were categorized into multiple choices.

Healthcare provider practices refers to the actions and communication strategies employed by healthcare professionals during immunization services, including health education or information sharing, next appointment reminders, availability of interpreters, and procedural standards before vaccination. These were measured through caregivers' responses to structured questions adjusted and adopted from the previous studies. The responses to questions were categorized into dichotomous (yes or no) or multiple choices depending on the question type.

Healthcare access-related barriers refers to the perceived barriers or caregivers' subjective beliefs about logistical, financial, time-taken or socio-political obstacles that hinder them from fully participating in immunization programs. Barriers include transportation, financial, time, documentation, and language.

Transportation barrier refers to caregiver's perceived difficulty in accessing immunization due to the issues related to distance or convenience of transportation to health facilities.

Financial barrier refers to the caregiver's perceived economic difficulty for immunization, including both direct and indirect costs such as transportation expenses, loss of daily income, and additional service-related costs (e.g., interpreter fees).

Time barrier refers to the caregiver's perceived sufficiency of time for immunization due to competing responsibilities or prolong waiting hours at clinic.

Documentation barrier refers to the caregiver's perceived difficulty in accessing immunization services due to lack of required legal or administrative documents, such as identification papers or birth registration.

Language barrier refers to the caregiver's difficulty in understanding or communicating with healthcare providers due to differences in language.

These were assessed through a structured questionnaire adjusted and adopted from the relevant literature reviews and the WHO Behavioral and Social Drivers of Vaccination Tool. The responses to questions were recorded as dichotomous (yes or no).

1.8 Conceptual Framework

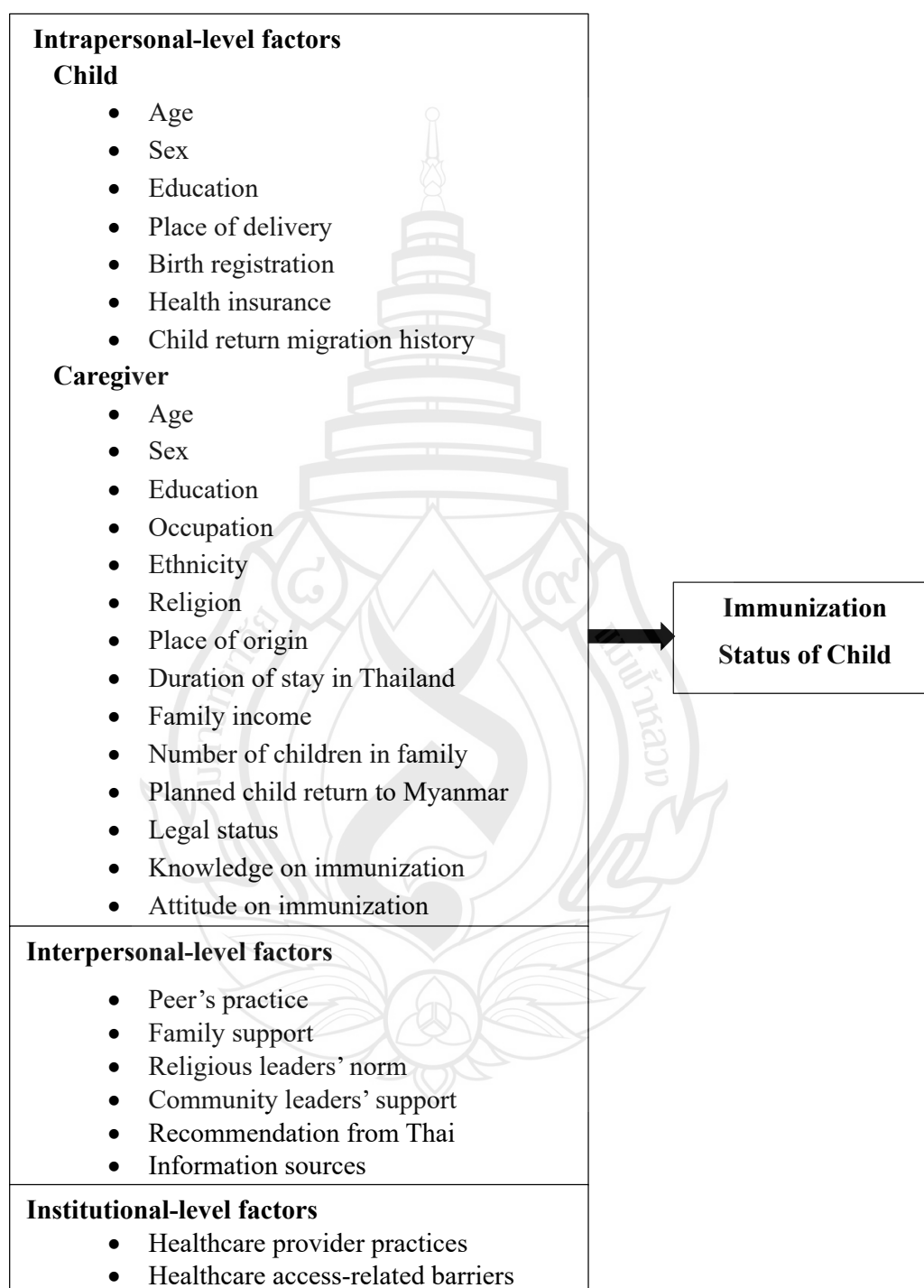


Figure 1.1 Conceptual Framework

CHAPTER 2

LITERATURE REVIEW

Purpose of this chapter is to describe the concept, situation, theories, and related factors to explain detail about each and every variable of the conceptional framework.

Review of literature is organized as follows:

2.1 Principles of Immunization

2.1.1 Adverse Events Following Immunization (AEFIs)

2.1.2 Routine and Catch-Up Immunization

2.2 Situation of Expanded Program on Immunization

2.2.1 Regional Perspectives: ASEAN

2.2.2 Country Perspectives: Thailand and Myanmar

2.3 Impact of Migration on Immunization

2.3.1 Concept of Migration

2.3.2 Immunization Rates and Disease Incidence Among Migrants

2.3.3 Challenges Faced by Migrants for Immunization

2.3.4 Migrant Health Insurance and Immunization

2.4 Socio-Ecological Model

2.5 Factors Related with Immunization Status

2.1 Principles of Immunization

Immunization, also known as vaccination, is one of the most successful public health interventions, saving millions of lives every year. It is essential to primary care, an undisputable human right, and among the best financial investments in health care (25). To understand the principle of immunization, the foundation starts with the immunity and immune system.

2.1.1 Adverse Events Following Immunization (AEFIs)

Vaccines are safe and effective, but they are not without risks like any other medications, having undesirable adverse reactions after immunization (AEFIs). These events can range from mild reactions, such as low-grade temperature and soreness at the injection site, to more severe conditions, including allergic reactions (27). AEFIs can be categorized into five groups based on their causal roots: the vaccine components related, vaccine quality related, immunization error related, anxiety related and the coincidental event (27). Those adverse events following immunization play significant role in vaccine hesitancy contributing to incomplete immunization (28).

For managing the AEFIs, risk communication is the most important strategies (29). Caregivers should be informed about the benefits of and risks from vaccines in appropriate language and at proper educational level. Furthermore, adverse events should be monitored and reported according to several surveillance systems such as Vaccine Adverse Event Reporting System (VAERS). While vaccines are among the most effective tools for preventing infectious diseases, monitoring AEFIs is vital to ensure their continued safety and efficacy (29).

2.1.2 Routine and Catch-up Immunization

Routine immunization has led to the near-eradication of diseases like polio and a significant decline in measles and diphtheria cases. However, challenges such as logistical barriers, and disparities in healthcare access can lead to missing of routine immunization, particularly in low-resource and conflict-affected regions (30). Catch-up immunization is a strategy designed to vaccinate individuals who have missed doses in their routine immunization schedule, ensuring they still receive protection against infectious diseases (4). This approach is particularly crucial for children who were

unable to receive vaccines on time due to healthcare access issues, conflicts, or migration e.g., Myanmar migrant children in Thailand.

For catch-up immunization, Thailand established laws and policy for checking vaccination upon school entry in 2013 (31). Vaccination history check is performed by schools at entry to Grade 1 (children 6-7 years of age) (31). Every child entering school is required to complete all vaccines recommended on the Thailand National Immunization Schedule from birth to four years of age. For those children identified as un- or incompletely vaccinated, an accelerated schedule helps children receive catch-up vaccination which includes: BCG, OPV, MMR, HepB, LAJE, IPV (for children aged 1-6 years), DTP (for children aged 1-6 years), and Td (for children aged 7 and older). The un- or incompletely vaccinated child is either referred to the local hospital or health center to receive the catch-up vaccines, or, in some schools, health care staff may come to the school to deliver the catch-up vaccines (31). Both routine and catch-up immunization programs are important to provide immunization and prevent vaccine-preventable disease outbreaks among vulnerable children (4).

2.2 Situation of Expanded Program on Immunization (EPI)

Many countries have their own national immunization programs that align with WHO recommendations, adapting schedules to their specific epidemiological situations.

2.2.1 Regional Perspective: ASEAN

The South-East Asia Regional Immunization Vision and Strategy (SEARIVS) aims for universal immunization and measles elimination by 2030. Key vaccines under Expanded Program on Immunization (EPI) are BCG, DTP, Hepatitis B, Polio, Measles, Rubella, Hib, Pneumococcal, Rotavirus, and HPV. According to WHO Immunization Data Portal, developed countries like Brunei, Malaysia, and Singapore are still maintaining the achievement over 95% immunization rates, while coverage in Myanmar and Indonesia still remains lower for some vaccines. Immunization coverage of Southeast Asia in 2023 revealed that there was a significant difference between Thailand and Myanmar EPI coverage especially in Hepatitis B, as showed by table 2.1

(32). Therefore, it would be fruitful to study the situation of immunization coverage in a specific area such as Thai-Myanmar border which presents as an area with high migration of Myanmar migrants into Thailand.

Table 2.1 Vaccine Coverage of Southeast Asia Countries, 2024 (WHO)

Country	BCG	Hep B (birth dose total)	DTP containing (1 st dose)	Hib3	IPV	MMR (measle contain vaccine 1 st dose)	Td	JE
Brunei	99	99.97	99.98	99	99	97	N/A	N/A
Cambodia	91	88.66	97.64	85	83	79	N/A	95.86
Indonesia	88	92.3	91.42	83	71	82	87.5%	87.5
Laos	93	81.82	98.76	84	81	80	80.08%	80.08
Malaysia	99	103.7	99	97	99	96	N/A	100
Myanmar	80	16.56	80.07	76	78	74	75.56%	75.56
Philippine	91	N/A	78.02	89	82	81	N/A	N/A
Singapore	98	98.8	98.4	98	98	97	N/A	N/A
Thailand	99	93.1	96	83	92	93	84.6%	84.6
Timor	90	96.94	89	83	80	72	N/A	N/A
Vietnam	95	87.64	80	65	85	82	85.28%	85.28
SEA	90	90	92	89	87	91	N/A	N/A

Note* N/A = No data

Source (32)

2.2.2 Country Perspectives: Thailand

Thailand EPI is well known for its high national coverage, generally above 90% for essential vaccines like BCG, DTP, and OPV vaccines (2). For 2024, Thailand's routine EPI schedule (for children aged under 7 years) covers 12 vaccine preventable diseases: tuberculosis, hepatitis B, Hemophilus influenzae type b, diphtheria, tetanus, pertussis, poliomyelitis, Rota virus, measles, mumps, rubella and Japanese encephalitis. as presented in table (2.2) (2). Throughout the years, Thailand revised and edited many vaccines in their EPI program. The significant changes are found at 2020, 2021, and

2024. In 2020, Rota vaccine was launched countrywide (2). Then, in 2021, age for the second time MMR vaccine changed from 2.5 to 1.5 years (2). Lastly in 2024, in the place of one dose of Inactivated Polio Vaccine (IPV) followed by four doses of Oral Polio Vaccine (OPV), the new schedule came with two doses of IPV followed by three doses of OPV (33).

Despite Thailand's strong national immunization coverage, vaccine preventable diseases (VPD) such as Diphtheria, Pertussis, Measles, and Rubella are still reported in some borders and rural areas of Thailand, as presented in table (2.3) (11, 12). From 2017 to 2023, Thailand reported intermittent VPD outbreaks, with certain diseases like pertussis and measles showing notable resurgence, especially in border or underserved areas (2). It highlights that while the national coverage is high, it is still challenging to fully eliminate the risk of VPD outbreaks, especially in the presence of mobile, unvaccinated, or under-vaccinated subpopulations such as migrants.

Table 2.2 Thailand's EPI Schedule for Under-7 Children (2024)

Child's age	Immunization schedule by age	Vaccines given
Under 12 months	At birth	BCG, HB 1
	2 months	DTP-HB-Hib 1, IPV 1, Rota 1
	4 months	DTP-HB-Hib 2, IPV 2, Rota 2
	6 months	DTP-HB-Hib 3, OPV 3, Rota 3
	9 months	MMR 1
1-2 years	1 year	LAJE 1
	1 year and 6 months	DTP 4, OPV 4, MMR 2
2-under 7 years	2 year and 6 months	LAJE 2
	4 – 6 years	DTP 5, OPV 5

Source (34)

Table 2.3 Thailand- reported cases of vaccine preventable diseases (2017-2023)

Year	Diph- theria	Pertus- sis	NT (% of all tetanus)	Measle	Rubella	Mump	JE
2017	5	55	60 (0%)	1,946	34	17	28
2018	90	79	65 (0%)	6,035	64	2,061	19
2019	70	99	1 (2%)	5,412	142	2,553	4
2020	79	90	33 (0%)	802	195	4	33
2021	0	4	0	66	8	0	0
2022	0	10	0	64	9	8	0
2023	2	737	0	64	12	0	0

Source (2)

2.2.3 Country Perspectives: Myanmar

The EPI program of Myanmar, launched in 1978, offers 13 antigens in its routine schedule, preventing tuberculosis, hepatitis B, Hemophilus influenzae type b, diphtheria, tetanus, pertussis, poliomyelitis, Rota virus, measles, mumps, pneumococcus, rubella and Japanese encephalitis (8). Compared to Thailand's EPI, it has fewer booster doses for diphtheria, pertussis, tetanus, and polio, but incorporated pneumococcal conjugate vaccine (PCV) in 2016, which is not included in Thailand's routine program (8). Moreover, Myanmar has faced significant setbacks due to the COVID-19 pandemic and the political crisis that began in February 2021, leading to a decline in vaccination coverage for many essential vaccines (9). The EPI coverage dropped below 50% or more for many essential vaccines: BCG (48.2%), DTaP1 (44.9%), HepB3 (37.2%), and IPV1(45.8%) in 2021 (10). Sequentially, the increasing cases of vaccine-preventable diseases (VPDs), such as measles, diphtheria, pertussis, neonatal tetanus, rubella and Japanese Encephalitis cases were reported among Myanmar children after 2021 (8).

Table 2.4 Myanmar- reported cases of vaccine preventable diseases, 2017-2023

Year	Diph- theria	Pertus- sis	NT (% of all tetanus)	Measle	Rubella	Mump	JE
2017	68	4	20 (33%)	1,293	6	ND	442
2018	127	28	22 (38%)	1,389	13	ND	126
2019	22	30	25 (43%)	5,252	28	ND	115
2020	169	13	17 (ND)	444	3	ND	75
2021	3	ND	8 (ND)	8	3	ND	2
2022	29	ND	14 (ND)	10	0	ND	6
2023	90	50	8 (100%)	15	2	ND	19

Note* ND= No data

Source (8)

2.3 Impact of Migration on Immunization

2.3.1 Concept of Migration

Migration refers to the movement of people away from their usual place of residence to a new place of residence, either across an international border or within a State (36). More than 1 billion people are on the move globally, about 1 in 8 of the global population (37). The number of people on the move is expected to grow due to many push and pull factors such as poverty, lack of security, lack of access to basic services, conflict, environmental degradation and disasters. Migrants often face worse health outcomes in countries of transit and destination due to barriers including different language and culture, institutional discrimination and limited access of health services (37).

2.3.2 Impact of Migration on Immunization Rates and Diseases Incidence

Migration significantly impacts immunization rates and the incidence of vaccine-preventable diseases (VPDs) especially among children's populations (37, 38). The systematic review of "Migration and outbreaks of vaccine-preventable disease in Europe" identified 1,357 cases of VPDs among migrants, particularly affecting children

and adolescents from Eastern Europe and adults from East Africa (39). Diseases include predominantly measles and varicella, followed by hepatitis, rubella, and mumps (39). As well as in the Middle East and South African regions, a meta-analysis reported that the coverage for childhood vaccination amongst migrants was low, with only 36.0% of migrant children fully vaccinated according to national schedules (40). Drivers for childhood vaccination uptake in migrants consisted of limited availability of vaccines, communication barriers, financial difficulties, poor caregiver's knowledge about services, and concerns about safety and benefits (40). In Southeast Asia regions, the study on Myanmar migrant children in Bangkok Metropolitan area in 2013 evidenced that the immunization coverage of migrant children is significantly lower than that of Thai children and non-migrants in their countries of origin (41). These results confirmed that human migration negatively impacts child immunization coverage and vaccine preventable disease incidence.

2.3.3 Challenges Faced by Migrants for Immunization

Migrant populations often face barriers such as limited healthcare access, lack of awareness, language difficulties, and irregular legal status, which can hinder timely and complete vaccination for children (37). A new report of the World Health Organization finds that existing policies on the inclusion of migrants in national immunization plans and their implementation vary greatly across countries and regions globally. There are disparities in terms of access based on the legal status and the context in which migrant populations live (37, 42). Regarding Myanmar migrant children in Tak province Thailand, Canavati et al. in 2011 studied and identified that distance to immunization service is one of the factors that hinder children immunization (21). Parents reported that clinics were often too far away, and transportation was either unavailable or too costly. Perceived threats such as fear of side-effects, especially fever, made some parents hesitant to vaccinate their children. A significant barrier unique to that study's context was the fear of arrest by Thai authorities. Many parents expressed that they would only risk going to a clinic if their child was very ill, as they feared being stopped by police on their way to or at the clinic. Moreover, parents often had to prioritize work over taking their children for vaccinations, which added to the difficulty of accessing immunization services (21).

2.3.4 Migrant Health Insurance and Immunization

Thailand has implemented several health insurance schemes to improve healthcare access among migrant populations. For migrant workers, the Ministry of Public Health's (MOPH) healthcare facilities are allowed to sell health insurance cards under the Migrant Health Insurance Scheme (MHIS), including accompanying dependents. The cost of an insurance card is 365 baht per year for children under the age of 7 years. For older children aged 7 to 14 years, the cost is same as adults, which is 1,600 baht per year (22). The package of benefits is equivalent to the universal health insurance benefits of Thai citizens, both in- and out-patient care, as well as health promotion and disease prevention services such as age-appropriate immunization (22). There is also a non-governmental health scheme offered by certain NGOs, such as the health insurance card of the Migrant Fund (or M-Fund). However, M-Fund only operates in some selected regions such as Mae Sot (Tak Province), Sa Kaeo Province, and Sangkhlaburi District (Kanchanaburi Province). The M-Fund also covers for dependent children of migrants including immunization (35).

2.4 Socioecological Model (SEM)

The socioecological model (SEM) is a comprehensive framework that demonstrates individual health behaviors are influenced by broader social and environmental contexts (43). It also proposes that understanding those influences within across multiple levels is necessary to resolve and prevent public health problems (42). The model was grounded in interdisciplinary theories from sociology, psychology, and public health. Although there are many contemporary ecological models, McLeroy and others' (1988) categorize five sources of influence: intrapersonal, interpersonal, institutional, community, and policy, which this study employed. This model has been central to health research and promotion projects for several decades. Researchers have used it to study and improve health in complex settings including childhood immunization in Nigeria (44). A key strength of socioecological model is its focus on multiple levels of influence that broadens options for effective interventions. According to the core concepts of the socioecological model, the influences including

intrapersonal, interpersonal, institutional, community, and policy level factors affect people's health behavior (43).

At the intrapersonal (individual) level, factors consist of individual characteristics such as knowledge, attitudes, beliefs, and personal experiences etc. These factors include the developmental history of the individual. Interventions at the intrapersonal level include educational programs, mass media, support groups, organizational incentives, or peer counseling. But the theory of change, the targets of the intervention include characteristics of the individual, such as knowledge, attitudes, or intentions to comply with behavioral norms (43).

Interpersonal factors, including family, social networks, and peers in the community, significantly influence individuals' decisions regarding a specific health decision. Social relationships provide important social resources, including emotional support, information, access to new social contacts and social roles. These social resources are important mediators for one's well-being. The interpersonal approaches can be designed to modify social influences which serve to encourage, support and maintain undesirable behaviors. While the ultimate target of these strategies may be changes in individuals, the proximal targets are social norms and social influences (43).

Institutional factors include social institutions with organizational characteristics, and rules and regulations for operation. This is a third level of environmental considerations which can be used to support behavioral changes, the importance of organizational change as a target for health promotion activities, and the importance of organizational factors in the distribution of health promotion programs (43).

By applying the socio-ecological model, this study allows for a multi-dimensional analysis to identify gaps at the different levels and develop targeted interventions accordingly. Building on the work of Olaniyan et al. (2021), this study adapts the model by incorporating only three levels; intrapersonal-level, interpersonal level, and institutional level (44). The adaptation was made based on the study scope, availability of measurable variables, and relevance to the research objectives. Therefore, this study applies a modified socio-ecological framework to examine factors associated with incomplete immunization among Myanmar migrant children.

2.5 Factors Associated with Immunization Status

2.5.1 Age

Variations in caregiver's age and child's age may influence immunization status due to differences in healthcare access, health knowledge, and health-seeking behaviors. A study in Bangladesh demonstrated that the caregiver's age was significantly correlated with child immunization uptake (46). Mothers in the middle-aged group were more likely to fully immunize their children than the youngest and the oldest age groups (aOR= 2.919, 95% CI= 1.997-4.258). The study postulates that increased immunization rates result from improved caregiver's experience and awareness with age (46). Similarly, the study in Nigeria showed that caregivers aged over 30 years showed a significant relationship with their children's full vaccination status (aOR= 10.63, 95% CI: 1.66-68.19) (47). It assumed that the older caregivers possess better knowledge of immunization, positively influencing the immunization outcomes for their children.

Regarding the child's age, a mixed method cross-sectional study by Kantayaporn et al. (2013) in the Bangkok Metropolitan Area (BMA) highlighted that Myanmar migrant children younger child (under 12 months) had higher vaccination coverage compared to other older children (41). Moreover, it revealed that about 80% of these children less than 1 year old had the Maternal and Child Health (MCH) record card while the record keeping rate declined as children grew (41). Therefore, analyzing the child's age can help assess immunization dropouts and delays. By exploring these factors among Myanmar migrant children, this study can provide insights into age-related disparities in vaccination status and inform targeted interventions.

2.5.2 Sex

A study in Hyderabad, India reported that female children were found to have lower immunization rates than male children, with 39% and 61% respectively (48). A 2017 review of Gavi-supported countries also revealed that nations with higher levels of gender inequality exhibited lower and less equitable child vaccination coverage (49). This suggests that societal gender norms and disparities can influence healthcare delivery and access, affecting immunization rates. Nevertheless, the study of "Factors

associated with immunization status among Myanmar migrant children aged 1-2 years in Tak province, Thailand” showed no significant association between gender of the children and their immunization status (19). However, the reason might be its focus on a relatively small and specific population (children aged 1-2 years), which may have limited its ability to detect subtle gender-based disparities.

Despite those findings, it remains important to consider gender as a potential influencing factor in immunization uptake. Cultural norms prioritizing boys over girls may still exist within certain Myanmar migrant communities, particularly in less regulated settings. Regarding the gender of caregivers, studies did not specifically analyze the direct effect of guardian’s gender and child immunization status. Also, there were limited studies exploring the association between a caregiver's gender and a child's immunization status. Hence, ongoing monitoring and gender related investigations should be encouraged to ensure equitable vaccine access for all children.

2.5.3 Place of Child Delivery

The study focused on the relationship between the facility delivery and infant immunization in Ethiopia indicated that infants born in healthcare facilities are more likely to receive timely immunizations compared to those born at home (50). Likewise, a study conducted in Tak province to assess factors influencing immunization status highlighted the significant association between the place of delivery and the immunization status (19). Mothers who delivered their child at health facility based were more likely to have completely immunized children. Among complete immunized group, there were 67.7% of mother who attended health facilities-based delivery (19). Since the deliveries occurring in healthcare facilities provide immediate access to neonatal vaccines, such as the Bacille Calmette-Guérin (BCG) vaccine and the first dose of the hepatitis B vaccine, home births may lack this immediate access, leading to delays in initiating the immunization schedule. Therefore, the place of delivery of children such as home-based or health facility-based may influence the immunization status of children.

2.5.4 Birth Registration

Birth registration also is a critical factor of migrant children’s access to health services, including immunization. A study in the Dominican Republic found that migrant Haitian children without birth certificates were delayed by nearly one vaccine

dose compared to those with certificates. Specifically, children without birth certificates have 13, 11, and 30 percentage points less likelihood of being vaccinated with DTP1, OPV1, and MCV respectively and decreased the probability of having up-to-date vaccination by 27 percentage points at 12 months of age (51). Likewise in Thailand, research indicates that migrant children with birth certificates are more likely to access health services including immunization because they are more liable to have health insurance coverage. A study along the Thai-Myanmar border reported that having a birth certificate increased the odds of a child possessing health insurance by 1.89 times, thereby enhancing their access to healthcare (23). These findings underscore the importance of birth registration as a facilitator of immunization uptake among migrant populations.

2.5.5 Health Insurance

According to WHO, children with health insurance coverage are more likely to receive complete vaccinations than those without insurance. Insurance helps reduce financial barriers to healthcare, ensuring access to vaccination services (60). Moreover, a study conducted by Chamchan et al. (2022) in the special economic zone of Thai-Myanmar border indicates that migrant children with health insurance coverage are more likely to access health services including immunization. The study revealed that 83.2% of the migrant children did not have health insurance (23). Hence, understanding the impact of health insurance on immunization can provide evidence-based recommendations for expanding insurance coverage and ensuring all Myanmar migrant children receive essential vaccines. Moreover, there is little information on these variables and quality of life among Myanmar migrant workers. Therefore, this study examined the insurance status of children as a variable.

2.5.6 Return Migration History

Migration and cross-border mobility are important determinants of childhood immunization, particularly among migrant populations. Children who move between countries often experience disruptions in vaccination schedules due to differences in healthcare systems, limited access to services, and challenges in maintaining continuity of care. A study conducted along the Thailand–Myanmar border by Kaji et al. in 2016 reported that migrant child had relatively low immunization coverage, with only about half being fully vaccinated, and highlighted that the transitory nature of migrant

populations makes it difficult to complete multi-dose vaccination schedules and maintain vaccination records (20). Similarly, research in Thailand among Myanmar migrant communities has identified mobility patterns as a key barrier to accessing immunization services, contributing to gaps in vaccination coverage (23). These findings indicate that return migration, particularly prolonged absence from the host country, may further disrupt continuity of care and increase the likelihood of incomplete immunization. Therefore, migration history, including return migration patterns, was considered an important factor when assessing immunization status among migrant children.

2.5.7 Educational Status of Caregiver and Child

Previous studies proved that higher education status of caregivers correlates with improved health-seeking behaviors, leading to better immunization status in children. A cross-sectional study by Alotaibi et al. (2024) Saudi Arabia discussed that children of caregivers with higher education levels were more likely to be up to date with their vaccinations, with statistical significance (aOR= 2.073, 95% CI= 1.083-3.969) (52). This suggests that caregiver's education plays a crucial role in health-seeking behaviors related to immunization. Therefore, it is very pragmatic to include education of caregiver as a key variable since most of the Myanmar migrants reportedly have poor education status (19). In addition, the education status of children also plays important role their immunization status according to WHO's Essential Program on Immunization (30). The WHO says school plays a vital role in the delivery of routinely recommended vaccines and checking vaccination status at entry to, or during school. Hence, this study considers the education status of children as one of the variables to explore whether school enrollment among Myanmar migrant children in Chiang Rai is associated with higher immunization rates or not.

2.5.8 Occupation of Caregiver

According to the study explored by Vikram et al. (2013) in India, children of the caregivers who engaged in formal employment were more likely to be fully vaccinated than those whose were unemployed or engaged in informal works. The structured nature of formal employment was associated with better health-seeking behaviors and adherence to vaccination schedules (53). Similarly, another research in India by Yadav et al. (2022) concluded that mother's occupation significantly influences

child immunization status, with educated and professionally working mothers achieving better immunization rates (54). However, the study of immunization status of Myanmar migrant children in Tak province showed that unemployed mothers were the major group in completely immunized (19). There was a possibility that employed mothers have higher chance to follow immunization appointment than those who has work.

Nevertheless, many Myanmar migrant individuals in Chiang Rai are working in informal sectors like agriculture, domestic work, or constructions, where job instability and prolong working hours may hinder their ability to access healthcare services, including immunizations for their children. Therefore, the caregiver's occupation would be a crucial variable to explore the status of immunization among Myanmar migrant children.

2.5.9 Ethnicity

Variation in ethnicity also influences the immunization uptake due to different cultural and systemic factors. In New Zealand, the study by Charania, Nadia A et al. (2018) found out that the migrant children had lower age-appropriate vaccination rates compared to their New Zealand-born equivalents (55). Notably, migrant children from Pacific ethnicities exhibited lower reported coverage than other ethnic groups, highlighting the influence of ethnicity on immunization status within migrant communities (55). Moreover, in a meta-analysis study of ethnic disparities in immunization, across 64 countries, significant ethnic disparities were found, with a median gap of 10 percentage in zero-dose prevalence between ethnic groups (56). The study highlighted that the ethnicity significantly influences a child's immunization status in low-income and middle-income countries. Therefore, ethnic differences in immunization coverage should be observed in this context since Myanmar migrants have wide variations in ethnicity and related cultural beliefs. Although this variable is not a modifiable, understanding the disparities is essential for developing the targeted interventions to improve the immunization status.

2.5.10 Religion

According to Shrivastwa et al. (2015), migrants from certain religious backgrounds, such as those from Muslim or Christian communities, showed more vaccine hesitancy due to misconceptions or religiously based objections to specific

vaccines (57). That study also highlighted those religious beliefs played a significant role in vaccination uptake, particularly in communities with strong religious identities. Those findings were matched by a global rapid review of drivers of vaccine hesitancy which found that cultural and religious norms significantly impacted vaccine acceptance and hesitancy (39). These norms often influenced decisions regarding immunization, highlighting the role of religion in vaccine uptake (39). Hence, the religion as a non-modifiable factor should be explored in this study for more specific interventions.

2.5.11 Place of Origin

The region of origin of migrant caregivers can influence their children's immunization status due to varying levels of healthcare access, cultural beliefs, and exposure to health education in their native residences. For instance, a study in Minnesota, USA, found that migrant children of Somali-born mothers were less possible to be up-to-date with vaccinations, partly due to vaccine hesitancy embedded in cultural beliefs (58). Similarly, in Thailand, research focusing on Myanmar migrant populations has highlighted that caregivers from different ethnic backgrounds and regions may have diverse experiences and attitudes towards immunization. A study in Tak province revealed that maternal knowledge and cultural factors significantly influenced the immunization status of Myanmar migrant children (19). These studies suggest that the caregiver's place of origin is an important variable affecting immunization behaviors and should be considered in analyses in order to understand and improve vaccine uptake among migrant children.

2.5.12 Duration of Stay in Thailand

A study conducted along the Thailand-Myanmar border in 2016 indicated that overall vaccine coverage was low among migrant school children, with continuous mobility, leading to short duration of stay in their community, as the major barriers to immunization among those populations (20). Another study for vaccination coverage among children of migrant workers by Pinna et al. (2020) also evaluated that mobility of migrant workers and inaccessibility to health services were identified as main challenges faced by migrant parents in vaccinating their children (59). Similarly, a study focused on Myanmar migrant children between 1-2 years old in Tak province showed a significant association between length of staying in community and immunization

status of children ($p < 0.05$). It reported that mothers have been living in communities 3-7 years were the major group (36%) among completely immunization status of children compare to 17.4% of those who stayed in community less than 3 years (19).

In case of Myanmar migrant families in Chiang Rai, the nature of jobs such as seasonal works and informal works can impact on their length of stay in the community and may influence access to healthcare services including immunization. Hence, duration of stay was included to assess the impact of length of stay on child's immunization status.

2.5.13 Family Income

A study focused on socioeconomic inequalities in child vaccination in low or middle-income countries revealed that household income was positively correlated with increased immunization coverage among children (60). The study indicated that wealthier parents have better access to healthcare services, including antenatal care, which is linked to higher vaccination rates (60). Supportably, a cross-sectional study examining the relationship between inequality in household income and complete childhood immunization showed that the chance of receiving complete immunization was 1.95 (95%CI=1.35-2.80, $p < 0.001$) times higher among the children of the rich than the poor (61). In this study, economic constraints among Myanmar migrant communities may limit access to healthcare services, contributing to gaps in immunization rates.

2.5.14 Number of Children in The Family

A cross-sectional study carried out by Costa et al. in 2024 indicated that the number of siblings is a strong predictor in identifying children to be targeted by immunization campaigns (62). The study found that zero-dose prevalence increased from 10.5% for children with no siblings to 17.2% for those with four or more siblings (62). Moreover, a systematic review by Zemariam et al. (2024) reported that family size was associated with the probability of a child being fully immunized, suggesting that larger family sizes may pose barriers to complete immunization (63). Hence, assessing the impact of number of children in the family on immunization coverage among Myanmar migrant children in Chiang Rai can provide valuable insights to uncover factors associated with lower vaccination rates and delays in immunization.

2.5.15 Future Plan for the Child

Migrant caregivers' long-term plans regarding children's future residence, can reflect their migration intentions and shape caregiver decisions on health-seeking behavior, including immunization. A recent study in Thailand focusing on Myanmar migrant population along the Thai-Myanmar border indicated that migrants having future plan for their child are more likely to engage with the formal health system and prioritize preventive care such as vaccinations. The study revealed that having a plan for the migrant child to remain in Thailand and seek employment at or after age 15 years was significantly associated with greater likelihood that the child had health insurance by the odd ratio of 2.37 (23). In contrast, temporary or uncertain intentions might be associated with lower uptake of health services due to lower perceived benefits. Therefore, understanding migrants' future plans for their children is crucial for identifying groups at risk of under-immunization and designing targeted interventions.

2.5.16 Legal Status

A comprehensive review by the World Health Organization (WHO) identified that under-immunization and vaccine hesitancy among refugee and migrant populations are influenced legal status and access to healthcare services. The report emphasizes that undocumented migrants often face significant barriers to immunization, leading to lower vaccination coverage in these groups (64). Correspondingly, a qualitative study conducted in Tak province by Canavati et al. in 2011 identified several barriers to successful immunization among children of Myanmar migrant workers. Among the barriers, fear of arrest was the unique challenge for undocumented migrants (21). This challenge is likely to be present in Chiang Rai as well, given the similar demographic and policy setting. Therefore, including legal status in this study would help identify disparities in immunization coverage and guide more targeted interventions for vulnerable groups.

2.5.17 Knowledge of Caregiver

A cross-sectional study in Tak province showed that there was significant association between maternal knowledge and immunization status of children (19). In the study, the moderate level of knowledge was found as a major group. Similarly, in Indonesia, a quantitative cross-sectional study by Sulastri & Fadza (2024) focusing on the timeliness of basic immunization in infants aged 0-12 months" revealed that a

significant relationship was established between the caregiver's knowledge and the timeliness of immunization, with 76.7% of infants receiving vaccines on time when caregivers had good knowledge (65). Moreover, a cross-sectional study conducted among migrant mothers in Yiwu, in 2015 highlighted that mothers with children who were fully immunized had significantly better knowledge scores compared to those whose children were not fully immunized (66). For Myanmar migrant caregivers, especially mothers, their knowledge level for immunization may influence the decision to have their child immunized.

2.5.18 Attitude of Caregivers

According to research focusing on psychological and demographic factors influencing parents' attitudes toward vaccinating their children, a growing number of parents are found delaying or refusing vaccinations for their children, often due to attitudes shaped by their social circles (67). The study highlighted that trust in healthcare providers, fear of vaccine safety and efficacy, and social norms increased vaccine hesitancy among the caregivers. Comparably, a qualitative in rural India emphasizing on influential factors of caregivers' immunization perceptions highlighted that community members beyond primary caregivers play an influential role in caregivers' perceptions of vaccines and, ultimately, vaccine acceptance (68). Furthermore, a study found that parents' perceptions of their peers' intentions to vaccinate their children strongly impact their own vaccination decisions, featuring the pull of social norms on vaccine behavior (69). Therefore, by including caregiver attitude as a variable, it can provide deeper insights into behavioral barriers to immunization and inform tailored interventions to improve vaccine coverage among Myanmar migrant children.

2.5.19 Family Norm

A qualitative performed in Lagos state, Nigeria study by Olaniyan et al. (2021) highlighted that the roles that husbands, mothers, and mothers-in-law played in the decision-making of caregivers about childhood immunization. Intergenerational roles were also seen as influential on immunization decision-making. However, misinformation from family members, especially older generations, sometimes deterred caregivers from immunizing their children (44). Moreover, the study by Muhammed et al. (2022) found a strong statistically significant relationship between family support

and the immunization status of children (70). The study highlighted that better knowledge and support from families are associated with improved immunization outcomes. In Southeast Asian culture, family plays key role in individual's everyday lives and decision making. Therefore, examining family support could provide insights into why some Myanmar migrant mothers have their child fully vaccinated while others have not.

2.5.20 Peers' Norm

Perceived social norms of parents play significant role in their children immunization status, as evidenced by a study by Tu et al. (2023). Parents who believed that most of their peers were vaccinated were more likely to be vaccinated themselves. More importantly, children were 1.75 times more likely to be vaccinated if their parents thought that most of their child's friends were vaccinated (OR= 1.75, p-value= 1.03-2.93) (69). This underscores the influence of social circles on individual health choices. These results align with broader public health research, which suggests that social norms contribute to shaping health behaviors, including immunization (71). This is particularly relevant for migrant communities, such as Myanmar migrants, where social networks and peer influences may play an even more significant role in health decision-making. Hence, it needs to be examined as a variable in this study.

2.5.21 Community Leaders' Norm

A cross-sectional survey conducted in two districts of Uttar Pradesh, India by Hasan et al. (2020) revealed that the community-level social cohesion of caregivers was significantly associated with a child's DPT3 immunization status, indicating that higher levels of social cohesion within the community were linked to increased immunization rates among children (72). In the nature of Myanmar migrant families in Chiang Rai, they tend to depend on the community leaders for their social and health welfare. Hence, incorporating community support as a variable in this study may allow to capture the broader social and environmental factors influencing vaccination coverage among Myanmar migrant children.

2.5.22 Religious Leaders' Norm

The involvement of religious leaders significantly influences child immunization status, as evidenced by the previous researches (73,74). A study addressing barriers to immunization in Cross River State, Southern Nigeria highlighted

that engaging traditional and religious leaders in the intervention programs positively influences community norms, leading to improved childhood immunization uptake (69). Through religious leader engagement, they successfully reduced the proportion of unvaccinated children from 7% to 0.4%, indicating a significant improvement in vaccination rates. Additionally, it improved the timeliness of vaccinations for Penta 3 and Measles, with odds ratios of 1.55 and 2.81, respectively with $p < 0.001$ (69). In contrast, a qualitative study of some religious leaders in the Netherlands expressed varying degrees of acceptance towards vaccination, with some actively opposing it based on doctrinal beliefs (74). Based on the above literature reviews, religious leaders' norms have a significant influence on child immunization status which is why it should be studied in this context.

2.5.23 Information sources

Access to accurate and timely information is a key determinant of childhood immunization uptake. Caregivers rely on multiple information sources, including family members, friends, schools, community networks, and digital platforms, to make their vaccination decisions. A systematic review on caregivers' vaccination practices highlighted that interpersonal communication, particularly from family members and peers, plays a significant role in shaping caregivers' perceptions, trust, and acceptance of immunization (87). A qualitative study by Olaniyan et al. in 2021 focusing on multiple level factors influencing childhood immunization uptake indicated that the relationships within caregivers' social networks, including friends and neighbors played a significant role (44). The study stated that many caregivers learned about immunization from friends, which subsequently encouraged them to vaccinate their children. Therefore, for migrant populations, understanding caregivers' information sources is particularly important as they may depend on informal networks and alternative information channels due to language barriers and limited access to formal healthcare communication systems.

2.5.24 Healthcare Provider Practices

The immunization status of migrant children is influenced by healthcare provider practices upon immunization protocols for migrants. A mixed method pilot study focusing on catch-up vaccination among adolescent migrants in the United Kingdom highlighted that healthcare providers often lack training and knowledge

regarding vaccination guidelines for migrants, leading to missed opportunities for catch-up vaccinations (78). The study exposed those skills regarding catch-up vaccination protocols was associated with a substantial gap in vaccination coverage among the migrant population. Focus group discussions and interviews identified limited appointments and staff knowledge gaps as challenges that were needed to be addressed (78). Additionally, language difficulty between immunization providers and caregiver is one of significant barriers for migrants to receive the effective information, as shown by the study by conducted among Myanmar migrant children aged 1-2 years in Tak province (p-value= 0.014) (21).

2.5.25 Healthcare Access Related Barriers

The relationship between accessibility to healthcare facilities and the immunization status of migrant children is critical. The global overview of systematic reviews by Kaufman et al. highlighted 13 access-related barriers of caregivers (79). The most frequently mentioned barrier was time constraints, followed by transportation, and distance or location. Other examples of access barriers included long clinic waiting times, childcare challenges for siblings, and lack of vaccine availability. Vulnerable populations like migrants reported specific access barriers such as temporary residence, a lack of health insurance and social system exclusion or poverty (79). These findings were corroborated by a study by John et al. highlighting that the proximity to vaccination services significantly influences immunization rates, particularly among vulnerable populations such as migrant children (AOR= 1.63, 95% CI= 1.13-2.33) (80). It pointed that children living far from vaccination services are particularly vulnerable to under-vaccination (80). Hence, barriers related to healthcare services play pivotal role in determining the immunization status of migrant children which is why it should be investigated in this study.

Perceived barriers also play a crucial role in determining whether caregivers complete their children's immunization schedules. A case-control study by Puri et al. (2016) in Central Java found that perceived barriers had a direct negative effect on vaccination status of children (b= -0.96; 95% CI= -1.97 to 0.05; p= 0.063) (28). Specifically, caregivers who reported obstacles such as concerns over vaccine side effects were significantly less likely to ensure full immunization for their children. This highlights how psychological barriers can deter caregivers from seeking timely

vaccinations (28). Likewise, in case of Myanmar migrant population, a qualitative study conducted in Tak Province, Thailand carried out focus group discussions and identified several perceived barriers experienced by Myanmar migrant parents when attempting to immunize their children (21). Those included context specific barriers such as mobility pattern, geographical barriers, fear of arrest, fear of vaccine side effects, time constraints, forgetfulness, and transportation costs among Myanmar migrant population (21). Hence, addressing these perceived barriers is crucial for designing reactive and reachable immunization programs.



CHAPTER 3

MATERIALS AND METHODS

This chapter describes the methodology used in this study to assess factors associated with incomplete immunization among Myanmar migrant children. It outlines the study design, study setting, study population, sample size, sampling techniques, research tools and their development. In addition, data collection procedures, data management, and statistical analysis methods are presented. Ethical considerations are also described to ensure that the study was conducted in accordance with appropriate research standards.

3.1 Study Design

This was a community based cross-sectional study to measure the immunization status and its factors associated among the Myanmar migrant children living in Mueang District and Mae Sai District of Chiang Rai Province, Thailand. The study was conducted between October to December 2025 for the periods of data collection.

3.2 Study Setting

The research was conducted in two districts within Chiang Rai, Thailand's northernmost province. According to Chiang Rai Provincial Labor Office, Mueang Chiang Rai District has the highest population density and there had been 17,000 officially registered Myanmar migrants residing there in 2024 (15). In October 2023, the International Organization for Migration reported that Mae Sai district hosted approximately 32,000 Myanmar migrants (83). Accordingly, Mueang Chiang Rai and Mae Sai Districts were selected since they are highly concentrated with Myanmar migrants.

3.3 Study Population

In this study, the study group was Myanmar migrant caregivers and their children were the unit of analysis.

3.3.1 Inclusion criteria

1. Myanmar migrant caregivers of 15 years and above, who have children aged under 7 years and are residing in Mueang district or Mae Sai district of Chiang Rai province at the time of the study.

2. Caregivers with ability to communicate in Burmese (Myanmar) language.

3. Caregivers who were willing and able to give informed consent to participate in the study.

3.3.2 Exclusion criteria

1. Caregivers who could not communicate well due to mental illness or physical disabilities such as hearing loss.

2. Caregivers with children, who could not be given vaccines due to medical contraindications.

3.4 Sample Size

Sample size was determined by using the Cochran's formula and the expected immunization coverage from the previous study which was 56.7% (19). The formula is as follows:

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

where:

n = required sample size

Z = 1.96 for 95% CI

P = expected immunization coverage = 56.7% (19) = 0.567(19)

d = desired precision (margin of error; ±5% (0.05))

$$n = (1.96)^2 (0.567) \frac{1-0.567}{(0.05)^2}$$

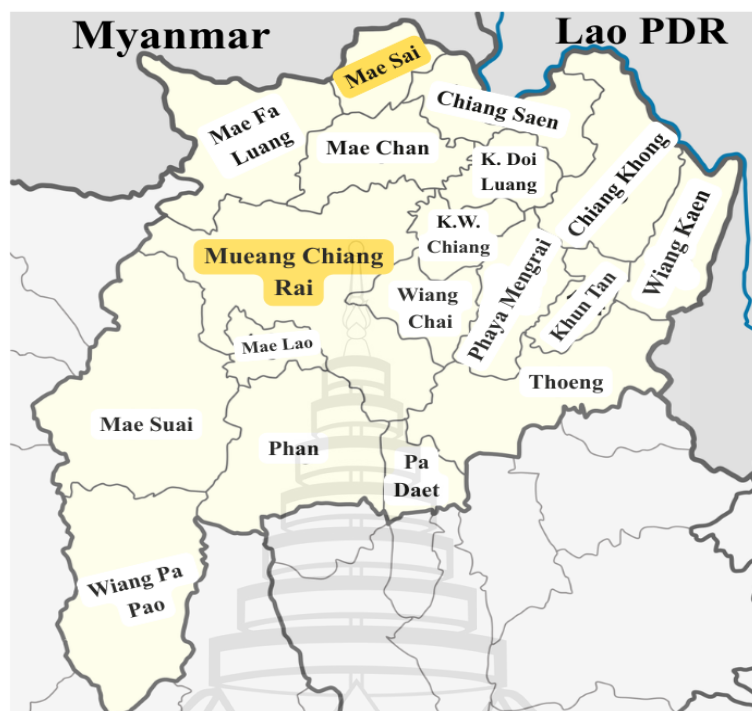
$$= 377.26 \sim 377$$

According to the calculations, the determined sample size was 377. To account for potential incomplete responses and withdrawals from the study, an additional 20% was added. Therefore, the final required sample size was 430.

3.5 Sampling Technique

This study employed snowball sampling to recruit Myanmar migrant caregivers residing in Mueang and Mae Sai districts, Chiang Rai Province, Thailand. This technique was selected because of the hard-to-reach nature of the target population, especially undocumented and temporary migrant workers, who often lacked formal registration and were not easily accessible through household listings or conventional sampling frames. While snowball sampling does not allow for strict representativeness, it is widely accepted in public health research involving vulnerable and mobile populations. Similar studies have demonstrated the effectiveness of snowball sampling in accessing migrant populations in Thailand. For example, a study by Chamchan et al. in 2022 successfully applied snowball sampling to explore health insurance status of cross-border migrant children, stating its utility in reaching undocumented or mobile groups who are often excluded from formal surveys (23).

To minimize selection bias, this study recruited participants from multiple entry points across both districts such as community-based organizations, migrant health volunteers (MHVs), and informal workplaces and also used a referral limit to reduce over-representation of closely linked networks. The recruitment process was begun by identifying initial participants ("seeds") who met the study's eligibility criteria, through local NGOs, migrant health volunteers, and community leaders who have trusted relationships with migrant communities. Each recruited participant was then asked to refer other eligible caregivers from their social or work networks. This chain-referral method was continued until the desired sample size, 430 was achieved. Moreover, to ensure the sample diversity, no more than ten samples was recruited from each seeder or initial participant. Around 50 seeder participants, equally 25 seeder participants per sub-district, was recruited and contacted to generate the estimated 430 sample caregivers.



Source (89)

Figure 3.1 Map of Chiang Rai province showing 18 districts.

3.6 Research Tools

The data was collected by a researcher-administered questionnaire in face-to-face interviews. The development of questionnaire was based on relevant literature reviews and adopted from validated tools such as the Parental Attitudes about Childhood Vaccines (PACV) survey and the World Health Organization's (WHO) Behavioral and Social Drivers (BeSD) of Vaccination tool. The questionnaire was constructed based on a modified socio-ecological framework to gather data across intrapersonal, interpersonal, and institutional levels.

Part 1: Socio-demographic Characteristics Questionnaire collected background information on caregivers and children, including age, gender, ethnicity, religion, place of origin, education level, occupation, length of reside in Thailand, family income, legal status, child's place of delivery, birth registration, health insurance status, return migration history, future plan for the child, and the total number of children in the

household. Specifically, age, duration of stay in Thailand, monthly income, and number of children were measured using continuous data and the remaining variables were collected as categorical data types.

Part 2: Assessment of child immunization status recorded the child's immunization history based on home-based health records (e.g., certified immunization card or pink book). For this study, Thailand's routine EPI schedule checklist attached in the pink books was used to identify the child's immunization status into two categories: complete or incomplete immunization.

Part 3: Assessment of knowledge of caregiver evaluated caregivers' knowledge of vaccine-preventable diseases, immunization timeline, and the possible effects of vaccination. The questions were adopted from the previous study with 0.71 of Cronbach's alpha reliability and 0.87 of IOC (index of objective congruence) (19). This tool was already translated into Myanmar version by Prakunwisit et al. (19). Total score of 13 for 13 questions with 1 score for each question. Each answer was given as "0" for wrong answer and don't know, and "1" for correct answer. Total score ranges from 0 to 13 points. The knowledge level was made based on percentage of knowledge scores.

1. Low knowledge – less than 60% of ranked score (<8 scores)
2. Moderate knowledge - 60-79% of ranked score (8-10 scores)
3. High knowledge – more than or equal 80% of ranked score (≥ 11 scores)

The final Index of Item-Objective Congruence (IOC) was 1.0, and Cronbach's alpha coefficient was 0.832.

Part 4: Assessment of attitude of caregiver measured caregivers' beliefs and perceptions regarding vaccine safety, efficacy, trust in healthcare providers, and overall vaccine hesitancy. Questions were adopted from the standard tool of Parental Attitudes about Childhood Vaccines (PACV), designed to measure vaccine hesitancy among parents and caregivers, with Cronbach's alpha value above 0.7. It was developed by Opel et al. in 2011 (85). Scoring of each of the 11 questions was done by assigning hesitant responses as 2, 'don't know or not sure' as 1, and non-hesitant responses as 0. Then, the raw total PACV score was calculated by simply summing each item. The total raw score ranges from 0 – 22. Then, it was converted the raw score to a 0-100 scale using simple linear transformation. A score of ≥ 50 indicates a poor (negative) attitude

toward immunization, while a score of <50 indicates a good (positive) attitude. The final IOC was 1.0, and Cronbach's alpha coefficient was 0.789.

Part 5: Assessment of interpersonal or social drivers of immunization examined social influences on immunization, including support from family members, peers, religious leaders, community leaders, Thai people's recommendation and the migrant community. It also assessed caregivers' source of information about immunization. This questionnaire section was adopted from the WHO Behavioral and Social Drivers of Immunization framework (BeSD) (71). There were 9 questions in total and used dichotomous scale (yes or no) and multiple-choice options for the responses accordingly. The final IOC was 1.0, and Cronbach's alpha coefficient was 0.742

Part 6: Assessment of institutional or health systemic drivers of immunization assessed the influence of healthcare systems on immunization. It covered topics such as healthcare provider practices, healthcare access-related barriers, and perceived health service quality. It also captures barriers like language difficulties, time constraints, financial constraints, and the availability of interpreters. This section was based on both relevant literature reviews and adopted from the WHO Behavioral and Social Drivers of Immunization framework (BeSD) (71). There were 15 questions in total and used dichotomous scale (yes or no) and multiple-choice options for the responses accordingly. The final IOC was 1.0, and Cronbach's alpha coefficient was 0.704 in the current study.

3.7 Research Tools Development

3.7.1 Translation Process

The structured questionnaire development process was in English first which was then be translated into Myanmar language using forward-backward method by fluent bilingual translators to ensure clarity, accuracy and cultural appropriateness for Myanmar migrants. The tools and questionnaires that were translated into Myanmar language in this study were questionnaires for immunization status, attitude of caregivers adapted from PACV tool, interpersonal and institutional drivers of immunization adapted from the WHO's BeSD tool.

3.7.2 Content Validity

Content validity was assessed by three experts from the fields of public health, pediatric, global health using the Index of Item-Objective Congruence (IOC). Each item was evaluated using a three-point scale: -1 (not relevant to the study context), 0 (relevant but requires revision), and 1 (relevant and appropriate). Based on these ratings, item-level content validity scores were calculated. Items with a score of less than 0.50 were considered irrelevant and were removed from the questionnaire. Items with scores between 0.50 and 0.70 were revised according to expert feedback, while items with scores greater than 0.70 remained in the final version of the questionnaire, as showcased in the Appendix E.

3.7.3 Reliability

The reliability of the questionnaire was pilot-tested with a sample of 30 Myanmar migrant caregivers who had characteristics similar to the study population. The pilot testing aimed to evaluate feasibility, clarity, question sequence, and overall understanding of the instrument, as well as to assess internal consistency. It was measured using Cronbach's alpha coefficient. A Cronbach's alpha value of ≥ 0.70 was considered acceptable for internal consistency. Items with Cronbach's alpha values between 0.50 and 0.69 were reviewed and any necessary adjustments were made prior to inclusion in the final questionnaire. Following revision, all questionnaire items demonstrated acceptable internal consistency, with Cronbach's alpha coefficients exceeding between 0.704 to 0.832.

3.8 Data Collection

The data collection process commenced only after receiving ethical clearance from the Mae Fah Luang University Research Ethics Committee. To identify participants and obtain necessary permissions, coordination was performed with local leaders, migrant worker organizations, and health services. Written informed consents were obtained from all selected participants to ensure they fully understood the purpose of the study, their role, and their rights. Participants were asked to sign the consent form before proceeding to the questionnaire phase. Caregivers were encouraged to answer

honestly without fear of affecting their access to healthcare services or legal status. In addition, interviews were conducted in a respectful and non-judgmental manner using trained interviewers and standardized questionnaires to reduce pressure on participants to provide socially desirable responses. Data were collected using structured questionnaires by face-to-face interview at their residence or community assembly areas, according to their availability. Each interview took around 20- 30 minutes. To ensure the confidentiality and anonymity of participants, all collected data were entered into a secure database. The data were anonymized and stored safely, with access restricted to authorized personnel only. After the participants completed answering the questionnaire, they were provided with a brochure which included knowledge session such as national immunization schedule, service providing places, safety and side effects of vaccines, importance of keeping records to receive immunization services.

3.9 Data Analysis

Data were carefully coded and entered into Microsoft Excel and then transferred to the Statistical Package for Social Sciences (SPSS-version 30, Chicago, IL) for analysis. The analysis implied both descriptive and inferential statistical methods.

3.9.1 Descriptive Analysis

Descriptive statistics was used to describe the characteristics of the study participants. Categorical variables were presented as frequencies and percentages. Continuous variables were summarized using measures of central tendency (mean, median) and dispersion (standard deviation, interquartile range).

3.9.2 Inferential Analysis

In inferential analysis, the chi-square test was used to assess the relationship between the independent variables and the dependent variable. Subsequently, logistic regression analysis was used because the dependent variable, immunization status, was dichotomous and categorized as complete or incomplete immunization. Initially, univariate logistic regression was performed to analyze the association between each independent variable and incomplete immunization status. Variables with a p-value less than 0.20 in the univariate analysis were included in the multivariable logistic

regression model. Prior to multivariable analysis, multicollinearity among independent variables was assessed using collinearity diagnostics. Variables with high Variance Inflation Factor ($VIF > 5$) and low tolerance values (< 0.2) were considered indicative of problematic multicollinearity. In cases of strong collinearity between conceptually related variables, one variable was excluded based on theoretical relevance to ensure model stability. After removing variables with strong collinearity, multivariate logistic regression was performed to identify factors independently associated with incomplete immunization while controlling for potential confounding effects. Variables were removed one after one to reach the final set of significant predictors at p -value < 0.05 . Model fit was evaluated using the Hosmer-Lemeshow goodness-of-fit test. The results were presented as crude odds ratios (cOR) and adjusted odds ratios (aOR) with 95% confidence intervals (CI).

3.10 Ethical Consideration

The Ethical Committee on Human Research of Mae Fah Luang University (MFU), Thailand No: EC 25133-18, COA:202/2025 approved on 19 October, 2025 before data collection. After the approval, participants were informed of the study's objective, potential risks and benefits from the study, and then the written informed consent was obtained from them. Participation in the study was entirely voluntary and participants had autonomy to withdraw from the study at any time without any impact on them. Interview was conducted for each to maintain participant privacy. The questionnaires were securely maintained and directly supervised by the researcher, ensuring that confidentiality is upheld. Anonymity and confidentiality were rigorously maintained through data collection, analysis, and presentation. All data will be securely destroyed one year after the completion.

CHAPTER 4

RESULTS

A total of 431 children were collected from caregivers according to the sample size calculated. However, the number of caregivers was unknown because of the lack of unique identifiers. After cleaning the data, only 423 children were analyzed in the study, while 8 questionnaires were excluded due to incomplete information. The presentation of results follows the study's conceptual framework, which organizes variables into three different levels: intrapersonal, interpersonal, and institutional.

4.1 Intrapersonal-level Characteristics

A total of 423 children were analyzed for descriptive results. The majority of the caregivers were mothers (88.9%), with a mean age of 35.3 years ($SD = 6.9$). Over two-third were from the central regions of Myanmar, specifically Mandalay and Magway divisions (73.0%). More than half of the caregivers (60.0%) had resided in Thailand for over 10 years and the majority had legal documentations (96.2%). Most of the caregivers received formal education and only 3.9% showed no formal education. In terms of occupation, only 29.7% were dependent and the majority were working in variety of jobs: 35.9% at mobile jobs (agriculture, construction, cross border trade) and 34.5% at stable jobs (factory, service). Nearly one-third of the caregivers earned family income less than 9,000 baht per month (28.6%), and over two-third of the them had more than 2 children (72.1%). Approximately half of the caregivers demonstrated a moderate level of knowledge regarding immunization (58.2%), while almost all caregivers showed a positive attitude toward immunization (99.1%) (Table 4.1).

In case of children, the mean age was 49.6 months ($SD = 26.7$), over half (57.0%) were boys and most of them were born in Thailand (85.3%). The vast majority were delivered in hospital setting (96.5%). In terms of health insurance, 82.3% of children were covered by Thai health insurance schemes and 17.7% had no health insurance. Regarding education, 42.6% had not yet started schooling, 24.3% were

attending preschool or kindergarten, and 33.1% were enrolled in primary school. Interestingly, there were history of return visit to Myanmar more than one year in 13.5% of children and 9% of caregiver revealed their plan of sending child back to Myanmar in the future. Overall, 78.5% of children were fully immunized according to the Thai national schedule, while 21.5% were classified as incompletely immunized (Table 4.1).

Table 4.1 Intrapersonal or individual-level characteristics (n=423)

Characteristics	n	%
Caregiver		
Age (years)		
<35	199	47.0
≥35	224	53.0
<i>Mean=35.3, SD±6.9, Min=20.0, Max=67.0</i>		
Sex		
Male	36	8.5
Female	387	91.5
Relationship to child		
Mother	376	88.9
Others (father, grandparents, relatives, etc.)	47	11.1
Ethnicity		
Bamar	379	89.7
Karen	19	4.5
Others (Shan, Rakhine, Mon, Kachin)	25	5.8
Religion		
Buddhist	384	90.8
Christian	28	6.6
Islam	11	2.6

Table 4.1 (continued)

Characteristics	n	%
Place of origin		
Central region	309	73.1
South & western regions	69	16.3
North & eastern regions	45	10.6
Duration in Thailand (year)		
<10	169	40.0
≥10	254	60.0
<i>Mean=10.2, SD±5.9, Min=0.3, Max=40.0</i>		
Legal status		
Undocumented	16	3.8
Documented	407	96.2
Education		
No formal education	17	3.9
Educated	406	96.1
Occupation		
Unemployed	125	29.6
Employed	298	70.4
Number of children		
≤1	118	27.9
2-3	270	63.8
≥4	35	8.3
<i>Median=2, IQR=1-2, Min=1, Max=7</i>		
Family income (THB)		
<9000	121	28.6
9001-14999	139	32.9
≥15000	163	38.5
<i>Mean=13479.9, SD±5997.8, Min=6000.0, Max=40000.0</i>		

Table 4.1 (continued)

Characteristics	n	%
Health insurance		
Have	300	70.9
Don't have	123	29.1
Knowledge on immunization		
Poor	118	28.0
Moderate	247	58.4
High	58	13.6
Attitude on immunization		
Negative	11	2.6
Positive	412	97.4
Child		
Age of child (months)		
≤12	61	14.4
13 - 59	166	39.3
≥ 60	196	46.3
<i>Mean= 49.6, SD±26.7, Min=1.0, Max=83.0</i>		
Sex of child		
Boy	241	57.0
Girl	182	43.0
Education		
No schooling yet	180	42.6
Preschool/ Kindergarten	103	24.3
Primary school	140	33.1
Country of birth		
Thailand	369	87.2
Myanmar	54	12.8

Table 4.1 (continued)

Characteristics	n	%
Birth registration in Thailand		
Have	369	87.2
Don't have	54	12.8
Births setting		
Home-based	15	3.5
Health facility	408	96.5
Health insurance of child		
Have	348	82.3
Don't have	75	17.7
Child return migration history		
Yes	56	13.2
No	367	86.6
Planned child return to Myanmar		
Yes	38	9.0
No	385	91.0
Immunization status		
Complete	332	78.5
Incomplete	91	21.5

4.2 Interpersonal-Level Characteristics

At the interpersonal level, majority of caregivers reported positive peer practices regarding immunization (95.7%) and high family support for child immunization (98.8%). Strong support from religious leaders and community leaders was also recorded, at 93.1% and 93.9%, respectively. Recommendations from Thai individuals was described by 70.9% of caregivers. Almost all caregivers (99.1%) answered having autonomy in making decisions about their child's immunization. Regarding information sources for immunization, migrant community members were

found as the most common source of information (97.2%), followed by close ones (family or friends) with 36.4%, schools (5.9%), and social media (1.9%) (Table 4.2).

Table 4.2 Interpersonal level characteristics (n = 423)

Characteristics	n	%
Peer practice of immunization		
Yes	405	95.7
No	18	4.3
Family support		
Yes	418	98.8
No	5	1.2
Religious leaders' support		
Yes	394	93.1
No	29	6.9
Community leaders' support		
Yes	397	93.9
No	26	6.1
Recommendation by Thai community		
Yes	300	70.9
No	123	29.1
Autonomy		
Yes	419	99.1
No	4	0.9
Information from family/ friends		
Yes	154	36.4
No	269	63.6
Information from neighbours		
Yes	13	3.1
No	410	96.9

Table 4.2 (continued)

Characteristics	n	%
Information from social media		
Yes	11	1.9
No	412	98.1
Information from migrant community		
Yes	411	97.2
No	12	2.8

4.3 Institutional-level Characteristics

Most caregivers received immunization services at government hospitals (50.1%) or primary health centers (46.1%), with only 3.8% using other settings such as private clinic, school, and outreach clinics. Nearly one quarter of caregivers described travel distances of ≥ 15 minutes to get to the service point (76.3%) and almost half of visits were noted to last for ≥ 1.5 hour (47.1%). Approximately one third of caregivers reported cost for immunization more than 150 baht per visit (26.9%). Only a few amounts (8.3%) of caregivers answered that they received reminder messages for immunization clinics, and 13.9% said that they received interpreter support at the clinic. Caregivers also reported information shared by healthcare providers mainly related to immunization schedules and service locations (96.2%), side effects (77.8), how immunization works (42.8%) and complication of missing doses (6.4%). Nevertheless, approximately half of the caregivers (39.0%) shared their experiences about barriers to immunization. The most described barrier was language barriers (39.0%). The second most common barrier was time barriers (5.7%). The others were financial barriers (4.7%), transportation barriers at 2.6% and the documentation issues at 0.5% (Table 4.3).

Table 4.3 Institutional level characteristics (n=423)

Characteristics	n	%
Place of immunization		
Primary health center	195	46.1
Government hospital	212	50.1
Others	16	3.8
Travel distance for immunization (mins)		
<15	323	76.3
≥15	100	23.7
<i>Mean= 10.6, SD= 5.2</i>		
Cost for one visit (THB)		
<150	309	73.1
≥150	114	26.9
<i>Mean= 134.5, SD= 323.3</i>		
Time taken for one visit (hour)		
<1.5	224	52.9
≥1.5	199	47.1
<i>Mean= 1.6, SD= 0.9</i>		
Reminder from clinic		
Yes	35	8.3
No	388	91.7
Interpreter support		
Yes	59	13.9
No	364	86.1
Information about functions		
Yes	181	42.8
No	242	57.2
Information about side effects		
Yes	329	77.8
No	94	22.2

Table 4.3 (continued)

Characteristics	n	%
Information about consequences of missing		
Yes	27	6.4
No	396	93.6
Information about schedule		
Yes	407	96.2
No	16	3.8
Barriers for immunization		
Yes	165	39.0
No	258	61.0
Time barrier		
Yes	24	5.7
No	399	94.3
Financial barrier		
Yes	20	4.7
No	403	95.3
Documentation barrier		
Yes	2	0.5
No	421	99.5
Language barrier		
Yes	165	39.0
No	258	61.0
Transportation barrier		
Yes	11	2.6
No	412	97.4

4.4 Comparison of Intrapersonal Characteristics between Complete and Incomplete Immunization

Chi-square analysis identified several caregiver and child-related factors significantly associated with immunization status. Among caregivers related factors, many variables were found out significant such as relationship status to the child (p-value = 0.037), occupation (p-value= 0.013), duration of residing in Thailand (p-value < 0.001), legal status (p-value = 0.010), health insurance status (p-value < 0.001), and their attitude toward immunization (p-value = 0.002). Regarding child factors, significant associations were found in child age group (p-value < 0.001), country of birth (p-value < 0.001), birth setting (p-value < 0.001), birth registration (p < 0.001), child health insurance (p < 0.001), history of return migration to Myanmar for over one year (p-value < 0.001), and future plan to return child to Myanmar (p-value < 0.001). No significant associations were found with caregiver age, sex, education, occupation, ethnicity, religion, income, number of children, ANC care, knowledge level, or child sex and education level (p-value > 0.05). Further information about the variables can be found in the table 4.4.

Table 4.4 Bivariate analysis of intrapersonal factors and immunization status (n=423)

Characteristics	Immunization status				χ^2	p-value
	Complete		Incomplete			
	(n=332)		(n=91)			
	n	%	n	%		
Caregiver						
Age (year)						
<35	159	47.9	40	44.0	0.444	0.554
≥35	173	52.1	51	56.0		

Table 4.4 (continued)

Characteristics	Immunization status				χ^2	p-value
	Complete		Incomplete			
	(n=332)		(n=91)			
	n	%	n	%		
Sex						
Male	26	7.8	10	11.0	0.915	0.395
Female	306	92.2	81	89.0		
Relationship to child						
Mother	301	90.7	75	82.4	4.916	0.037*
Others	31	9.3	16	17.6		
Occupation						
Unemployed	108	32.5	17	18.7	6.580	0.013*
Employed	224	67.5	74	81.3		
Ethnicity						
Bamar	295	88.9	84	92.3	3.058	0.213
Karen	14	4.2	5	5.5		
Others	23	6.9	2	2.2		
Religion						
Buddhist	300	90.4	84	92.3	0.734	0.760
Christian	22	6.6	6	6.6		
Islam	10	3.0	1	1.1		
Place of origin						
Central region	250	75.3	59	64.8	4.553	0.099
South & western	48	14.5	21	23.1		
North & eastern	34	10.2	11	12.1		
Duration in Thailand (year)						
<10	117	35.2	52	57.1	14.281	<0.001*
≥10	215	64.8	39	42.9		

Table 4.4 (continued)

Characteristics	Immunization status				χ^2	p-value
	Complete		Incomplete			
	(n=332)		(n=91)			
	n	%	n	%		
Legal status						
Documented	324	97.6	83	91.2	7.992	0.010*
Undocumented	8	2.4	8	8.8		
Health insurance						
Have	254	76.5	46	50.5	23.334	<0.001*
Don't have	78	23.5	45	49.5		
Family income (THB)						
<9000	92	27.7	29	31.9	0.791	0.665
90001-14999	112	33.7	27	29.7		
≥15000	128	38.6	35	39.4		
Number of children						
<1	95	28.6	23	25.3	0.519	0.763
2-3	209	63.0	61	76.0		
≥4	28	8.4	7	7.7		
Knowledge						
Poor	86	25.9	32	35.2	3.233	0.194
Moderate	198	59.6	49	53.8		
High	48	14.5	10	11.0		
Attitude						
Positive	325	97.9	87	95.6	14.733	0.002*
Negative	7	2.1	4	4.4		
Child						
Age (month)						
<12	57	17.1	4	4.4	17.264	<0.001*
13-59	137	41.3	29	31.9		
≥60	138	41.6	58	63.7		

Table 4.4 (continued)

Characteristics	Immunization status				χ^2	p-value
	Complete		Incomplete			
	(n=332)		(n=91)			
	n	%	n	%		
Sex						
Boy	189	56.9	52	57.1	0.001	1.000
Girl	143	43.1	39	42.9		
Education						
No schooling	148	44.6	32	35.2	2.687	0.261
Preschool	77	23.2	26	28.5		
Primary school	107	32.2	33	36.3		
Birth country						
Thailand	316	95.2	53	58.2	87.512	<0.001*
Myanmar	16	4.8	38	41.8		
Birth setting						
Home-based	3	0.9	12	13.2	31.506	<0.001*
Health facility	329	99.1	79	86.8		
Birth registration in Thailand						
Have	316	95.2	53	58.2	87.512	<0.001*
Don't have	16	4.8	38	41.8		
Child health insurance						
Have	310	93.4	38	41.8	130.447	<0.001*
Don't have	22	6.6	53	58.2		
Child return migration history						
Yes	14	4.2	42	46.2	82.179	<0.001*
No	318	95.8	49	53.8		

Table 4.4 (continued)

Characteristics	Immunization status				χ^2	p-value
	Complete (n=332)		Incomplete (n=91)			
	n	%	n	%		
Planned child return to Myanmar						
Yes	21	6.3	17	18.7	13.336	<0.001*
No	311	93.7	74	81.3		

Note* Significant level at $\alpha < 0.05$. Percentages are presented as column percentages.

4.5 Comparison of Interpersonal Characteristics between Incomplete and Complete Immunization

In comparison of interpersonal factors regarding immunization status of child, six variables were found as statistically significant; peer practice of immunization (p-value < 0.001), family support (p-value = 0.008), community leaders' support, religious leaders' support, recommendation from Thai individuals and receipt of information from Myanmar migrant community with p-value < 0.001 (Table 4.5).

Table 4.5 Bivariate analysis of interpersonal factors and immunization status (n=423)

Characteristics	Immunization status				χ^2	p-value
	Complete		Incomplete			
	(n=332)		(n=91)			
	n	%	n	%		
Peer practice on immunization						
Yes	329	99.1	76	83.5	42.552	<0.001*
No	3	0.9	15	16.5		
Family support						
Yes	331	99.7	87	95.6	10.251	0.008*
No	1	0.3	4	4.4		

Table 4.5 (continued)

Characteristics	Immunization status				χ^2	p-value
	Complete		Incomplete			
	(n=332)		(n=91)			
	n	%	n	%		
Community leader's support						
Yes	319	96.1	78	85.7	13.314	<0.001*
No	13	3.9	13	14.3		
Religious leader's support						
Yes	317	95.5	77	84.6	13.207	<0.001*
No	15	4.5	14	15.4		
Recommendation form Thai						
Yes	256	77.1	44	48.4	28.640	<0.001*
No	76	22.9	47	51.6		
Autonomy						
Yes	330	99.4	89	97.8	1.941	0.204
No	2	0.6	2	2.2		
Information from family/ friends						
Yes	127	38.3	27	29.7	2.272	0.142
No	205	61.7	64	70.3		
Information from neighbors						
Yes	12	3.6	0	0.0	1.517	0.315
No	320	96.4	91	100.0		
Information from migrant community						
Yes	329	99.1	82	90.1	20.926	<0.001*
No	3	0.9	9	9.9		
Information from school						
Yes	16	4.8	9	9.9	3.303	0.080
No	316	95.2	82	90.1		

Table 4.5 (continued)

Characteristics	Immunization status				χ^2	p-value
	Complete		Incomplete			
	(n=332)		(n=91)			
	n	%	n	%		
Information from social media						
Yes	8	2.4	3	3.3	0.222	0.709
No	324	97.6	88	96.7		

Note* Significant level at $\alpha < 0.05$. Percentages are presented as column percentages.

4.6 Comparison of Institutional Characteristics between Incomplete and Complete Immunization

At the institutional level, the status of immunization was significantly associated with place of immunization (p-value=0.004), travel distance to clinic (p-value=0.025), time taken for one visit (p-value=0.002), cost for one visit (p-value < 0.001), information about how immunization functions and about side effects with p-value < 0.001), and about schedule and place (p-value = 0.002). Experiencing barriers was strongly associated with incomplete immunization, particularly financial and language difficulty (p-value < 0.001), and time difficulty (p-value = 0.020) (Table 4.6).

Table 4.6 Bivariate analysis of institutional factors and immunization status (n=423)

Characteristics	Immunization status				χ^2	p-value
	Complete		Incomplete			
	(n=332)		(n=91)			
	n	%	n	%		
Place of immunization						
Primary health center	159	47.9	36	39.6	12.514	0.004*
Government hospital	166	50.0	46	50.5		
Others	7	2.1	9	9.9		

Table 4.6 (continued)

Characteristics	Immunization status				χ^2	p-value
	Complete		Incomplete			
	(n=332)		(n=91)			
	n	%	n	%		
Travel distance for immunization (mins)						
<15	262	78.9	61	67.0	5.587	0.025*
≥15	70	21.1	30	33.0		
Time taken for one visit (hour)						
<1.5	189	56.9	35	38.5	9.776	0.002*
≥1.5	143	43.1	56	61.5		
Reminder from health facility						
Yes	32	9.6	3	3.3	3.785	0.054
No	300	90.4	88	96.7		
Interpreter support						
Yes	41	12.3	18	19.8	3.286	0.087
No	291	87.7	73	80.2		
Information about how immunization works						
Yes	156	47.0	25	27.5	11.112	0.001*
No	176	53.0	66	72.5		
Information about side effects						
Yes	277	83.4	52	57.1	28.563	<0.001*
No	55	16.6	39	42.9		
Information about consequence of missing						
Yes	23	6.9	4	4.4	0.776	0.475
No	309	93.1	87	95.6		
Information about schedule						
Yes	325	97.9	82	90.1	11.884	0.002*
No	7	2.1	9	9.9		

Table 4.6 (continued)

Characteristics	Immunization status				χ^2	p-value
	Complete		Incomplete			
	(n=332)		(n=91)			
	n	%	n	%		
Barriers for immunization						
Yes	107	32.2	58	63.7	29.802	<0.001*
No	225	67.8	33	36.3		
Transportation barrier						
Yes	7	2.1	4	4.4	1.475	0.261
No	325	97.9	87	95.6		
Financial barrier						
Yes	6	1.8	14	15.4	29.229	<0.001*
No	326	98.2	77	84.6		
Time barrier						
Yes	14	4.2	10	11.0	6.121	0.020*
No	318	95.8	81	89.0		
Documentation barrier						
Yes	1	0.3	2	2.2	3.648	0.118
No	331	99.7	89	97.8		
Language barrier						
Yes	108	32.5	57	62.6	27.212	<0.001*
No	224	67.5	34	37.4		

Note* Significant level at $\alpha < 0.05$. Percentages are presented as column percentages.

4.7 Univariable Logistic Regression to Identify the Factors Associated with Incomplete Immunization

In univariable logistic regression, 30 variables were significantly associated with incomplete immunization with p-value <0.05. Details are presented in table 4.7.

Table 4.7 Univariate logistic regression analysis of intrapersonal, interpersonal, and institutional factors associated with incomplete immunization (n=423)

Characteristics	Immunization status				cOR	95% CI	p-value
	Complete		Incomplete				
	(n=332)		(n=91)				
	n	%	n	%			
Intrapersonal level							
Age of caregiver (years)							
<35	159	47.9	40	44.0	1.00		
≥35	173	52.1	51	56.0	1.17	0.73-1.87	0.505
Sex of caregiver							
Male	26	7.8	10	11.0	1.45	0.67-3.14	0.341
Female	306	92.2	81	89.0	1.00		
Relationship to child							
Mother	301	90.7	75	82.4	1.00		
Others	31	9.3	16	17.6	2.07	1.08-3.98	0.029*
Education							
No education	14	4.2	3	3.3	1.00		
Educated	318	95.8	88	96.7	1.29	0.36-4.59	0.693
Occupation							
Unemployed	108	32.5	17	18.7	1.00		
Employed	224	67.5	74	81.3	2.09	1.81-3.73	0.012*
Ethnicity							
Bamar	295	88.9	84	92.3	1.00		
Karen	14	4.2	5	5.5	1.25	0.44-5.58	0.67
Others	23	6.9	2	2.2	0.31	0.07-1.32	0.11

Table 4.7 (continued)

Characteristics	Immunization status				cOR	95% CI	p-value
	Complete (n=332)		Incomplete (n=91)				
	n	%	n	%			
Religion							
Buddhist	300	90.4	84	92.3	2.80	0.35-22.18	0.330
Christian	22	6.6	6	6.6	2.72	0.29-25.75	0.381
Islam	10	3.0	1	1.1	1.00		
Place of origin							
Central region	250	75.3	59	64.8	1.00		
South & western	48	14.5	21	23.1	1.85	1.03-3.33	0.039*
North & eastern	34	10.2	11	12.1	1.37	0.66-2.86	0.401
Duration in Thailand (year)							
<10	117	35.2	52	57.1	1.00		
≥10	215	64.8	39	42.9	2.45	1.53-3.93	<0.001*
Legal status							
Documented	324	97.6	83	91.2	1.00		
Undocumented	8	2.4	8	8.8	3.91	1.42-10.71	0.008*
Health insurance							
Have	254	76.5	46	50.5	1.00		
Don't have	78	23.5	45	49.5	3.19	1.96-5.16	<0.001*
Family income (THB)							
<9000	92	27.7	29	31.9	1.15	0.66-2.02	0.619
90001-14999	112	33.7	27	29.7	0.88	0.50-1.55	0.661
≥15000	128	38.6	35	39.4	1.00		
Number of children							
<1	95	28.6	23	25.3	1.00		
2-3	209	63.0	61	76.0	1.21	0.70-2.06	0.495
≥4	28	8.4	7	7.7	1.03	0.40-2.66	0.947

Table 4.7 (continued)

Characteristics	Immunization status				cOR	95% CI	p-value
	Complete (n=332)		Incomplete (n=91)				
	n	%	n	%			
Knowledge							
Poor	86	25.9	32	35.2	1.79	0.81-3.95	0.152
Moderate	198	59.6	49	53.8	1.19	0.56-2.51	0.653
High	48	14.5	10	11.0	1.00		
Attitude							
Positive	325	97.9	87	95.6	1.00		
Negative	7	2.1	4	4.4	2.13	0.61-7.46	0.235
Age of child (month)							
<12	57	17.1	4	4.4	1.00		
13-59	137	41.3	29	31.9	3.02	1.01-8.97	0.047*
≥60	138	41.6	58	63.7	5.99	2.08-17.27	<0.001*
Sex of child							
Boy	189	56.9	52	57.1	1.01	0.63-1.61	0.971
Girl	143	43.1	39	42.9	1.00		
Education of child							
No schooling	148	44.6	32	35.2	1.00		
Preschool	77	23.2	26	28.5	1.56	0.87-2.81	0.136
Primary school	107	32.2	33	36.3	1.43	0.83-2.46	0.202
Birth country							
Thailand	316	95.2	53	58.2	1.00		
Myanmar	16	4.8	38	41.8	14.16	7.37-27.19	<0.001*
Birth setting							
Home-based	3	0.9	12	13.2	16.00	4.59-60.44	<0.001*
Health facility-based	329	99.1	79	86.8	1.00		

Table 4.7 (continued)

Characteristics	Immunization status				cOR	95% CI	p-value
	Complete (n=332)		Incomplete (n=91)				
	n	%	n	%			
Birth registration in Thailand							
Have	316	95.2	53	58.2	1.00		
Don't have	16	4.8	38	41.8	14.16	7.37-27.19	<0.001*
Child return migration							
No	318	95.8	49	53.8	1.00		
Yes	14	4.2	42	46.2	11.00	6.13-19.75	<0.001*
Planned child return							
No	311	93.7	74	81.3	1.00		
Yes	21	6.3	17	18.7	3.40	1.71-6.77	<0.001*
Interpersonal level							
Peer practice							
Yes	329	99.1	76	83.5	1.00		
No	3	0.9	15	16.5	21.65	6.11-76.65	<0.001*
Family support							
Yes	331	99.7	87	95.6	1.00		
No	1	0.3	4	4.4	15.22	1.68-137.89	0.015*
Community leader's support							
Yes	319	96.1	78	85.7	1.00		
No	13	3.9	13	14.3	4.09	1.82-9.17	<0.001*
Religious leader's support							
Yes	317	95.5	77	84.6	1.00		
No	15	4.5	14	15.4	3.84	1.78-8.29	<0.001*
Recommendation from Thai							
Yes	256	77.1	44	48.4	1.00		
No	76	22.9	47	51.6	3.60	2.22-5.84	<0.001*

Table 4.7 (continued)

Characteristics	Immunization status				cOR	95% CI	p-value
	Complete (n=332)		Incomplete (n=91)				
	n	%	n	%			
Information from family/ friends							
Yes	127	38.3	27	29.7	1.00		
No	205	61.7	64	70.3	1.47	0.89-2.42	0.133
Information from neighbors							
Yes	12	3.6	0	0.0	1.00		
No	320	96.4	91	100.0	3.37	0.43-26.31	0.246
Information from migrant community							
Yes	329	99.1	82	90.1	1.00		
No	3	0.9	9	9.9	12.04	3.18-45.46	<0.001*
Information from school							
Yes	16	4.8	9	9.9	1.00		
No	316	95.2	82	90.1	0.46	0.19-1.08	0.075
Information from social media							
Yes	8	2.4	0	0.0	1.00		
No	324	97.6	91	100.0	0.72	0.19-2.79	0.639
Institutional level							
Place of immunization							
Primary health center	159	47.9	36	39.6	1.00		
Government hospital	166	50.0	46	50.5	1.22	0.75-1.99	0.42
Others	7	2.1	9	9.9	5.68	1.98-16.26	0.001*
Travel distance to clinic (mins)							
<15	262	78.9	61	67.0	1.00		
≥15	70	21.1	30	33.0	1.84	1.12-3.07	0.019*

Table 4.7 (continued)

Characteristics	Immunization status				cOR	95% CI	p-value
	Complete		Incomplete				
	(n=332)		(n=91)				
	n	%	n	%			
Time taken for one visit (hour)							
<1.5	189	56.9	35	38.5	1.00		
≥1.5	143	43.1	56	61.5	2.12	1.32-3.40	0.002*
Cost for one visit (THB)							
<150	259	78.0	50	54.9	1.00		
≥150	73	22.0	41	45.1	3.13	1.93-5.07	<0.001*
Reminder from clinic							
Yes	32	9.6	3	3.3	1.00		
No	300	90.4	88	96.7	3.13	0.94-10.46	0.064
Interpreter support							
Yes	41	12.3	18	19.8	1.00		
No	291	87.7	73	80.2	0.57	0.31-1.05	0.072
Information about how immunization works							
Yes	156	47.0	25	27.5	1.00		
No	176	53.0	66	72.5	2.34	1.41-3.89	0.001*
Information about side effects							
Yes	277	83.4	52	57.1	1.00		
No	55	16.6	39	42.9	3.78	2.28-6.27	<0.001*
Information about consequence of missing							
Yes	23	6.9	4	4.4	1.00		
No	309	93.1	87	95.6	1.62	0.55-4.81	0.386
Information about schedule							
Yes	325	97.9	82	90.1	1.00		
No	7	2.1	9	9.9	5.09	1.84-14.08	0.002*

Table 4.7 (continued)

Characteristics	Immunization status				cOR	95% CI	p-value
	Complete		Incomplete				
	(n=332)		(n=91)				
	n	%	n	%			
Barriers for immunization							
Yes	107	32.2	58	63.7	3.79	2.34-6.16	<0.001*
No	225	67.8	33	36.3	1.00		
Transportation barrier							
Yes	7	2.1	4	4.4	2.14	0.61-7.46	0.235
No	325	97.9	87	95.6	1.00		
Financial barrier							
Yes	6	1.8	14	15.4	9.88	3.68-26.53	<0.001*
No	326	98.2	77	84.6	1.00		
Time barrier							
Yes	14	4.2	10	11.0	2.80	1.20-6.54	0.017*
No	318	95.8	81	89.0	1.00		
Documentation barrier							
Yes	1	0.3	2	2.2	7.43	0.67-82.97	0.103
No	331	99.7	89	97.8	1.00		
Language barrier							
Yes	108	32.5	57	62.6	3.48	2.15-5.64	<0.001*
No	224	67.5	34	37.4	1.00		

Note* Significant level at $\alpha < 0.05$.

4.8 Multivariable Logistic Regression to Identify Factors Associated with Incomplete Immunization

Variables with a p-value less than 0.20 in the univariable analysis were included in the multivariable logistic regression model. However, prior to conducting multivariable logistic regression analysis, collinearity diagnostics were performed and

strong collinearity were identified between three pairs of variables. Between birth country and birth registration in Thailand, birth registration was retained since it more directly reflects legal inclusion and access to formal health services, which are critical determinants of immunization uptake. Similarly, between religious affiliation and community leader support, community leader support was selected because it represents a more actionable social influence on caregivers' health-seeking behavior, aligning with the interpersonal level of the socio-ecological model. Finally, between the composite variable of any barriers to immunization and language barrier, language barrier was retained as it represents a specific and critical access barrier that directly affects communication with healthcare providers and service utilization. This decision enhances the specificity and interpretability of the model while maintaining theoretical coherence and statistical stability.

Finally, after adjusting for potential confounders in multivariate logistic regression, six factors remained independently associated with incomplete immunization. Children without health insurance were significantly more likely to have incomplete immunization compared to those insured (aOR = 14.03, 95% CI: 6.45–30.54, $p < 0.001$). Similarly, children without Thai birth registration had higher odds of incomplete immunization compared to those with birth registration (aOR = 9.52, 95% CI: 3.74–24.27, $p < 0.001$). Children with a history of returning to Myanmar for more than one year were significantly more likely to experience incomplete immunization compared to those without such history (aOR = 19.35, 95% CI: 8.48–44.13, $p < 0.001$). Caregivers who perceived that other parents did not regularly practice child immunization were more likely to have children with incomplete immunization compared to those who perceived positive peer practice (aOR = 8.09, 95% CI: 1.47–44.54, $p = 0.016$). At the institutional level, caregivers who reported time-related barriers to accessing immunization services had significantly higher odds of incomplete immunization compared to those without such barriers (aOR = 4.09, 95% CI: 1.20–13.94, $p = 0.002$). Likewise, financial barriers were also significantly associated with incomplete immunization, with caregivers experiencing financial difficulty being more likely to have children with incomplete immunization compared to those without financial constraints (aOR = 7.07, 95% CI: 1.67–29.91, $p = 0.008$) (Table 4.8).

Table 4.8 Multivariable logistic regression analysis of intrapersonal, interpersonal, and institutional factors associated with incomplete immunization (n=423)

Characteristics	cOR	95% CI	p-value	aOR	95% CI	p-value
Child health insurance						
Insured	1.00			1.00		
Not insured	19.65	10.78-35.83	<0.001*	14.03	6.45-30.54	<0.001*
Thai birth registration						
Have	1.00			1.00		
Don't have	14.76	7.94-27.42	<0.001*	9.52	3.74-24.27	<0.001*
Return migration history						
No	1.00			1.00		
Yes	11.00	6.13-19.75	<0.001*	19.35	8.48-44.13	<0.001*
Peer practice on immunization						
Yes	1.00			1.00		
No	21.65	6.11-76.65	<0.001*	8.09	1.47-44.54	0.016*
Time barrier						
No	1.00			1.00		
Yes	2.80	1.20-6.54	0.017*	4.09	1.20-13.94	0.002*
Financial barrier						
No	1.00			1.00		
Yes	9.88	3.68-26.53	<0.001*	7.07	1.67-29.91	0.008*

Note* Significant level at $\alpha < 0.05$.

CHAPTER 5

DISCUSSION AND CONCLUSION

5.1 Discussion of Research Methodology

This study used a cross-sectional design, which is appropriate for estimating the prevalence and identifying associated factors of incomplete immunization among children at a specific point in time. For sampling, the snowball method was applied due to the nature of the study population. Myanmar migrants in Thailand are often scattered and may be considered a hard-to-reach group, as many live within close community networks and are not easily identifiable through registrations and lists. Using snowball sampling allowed the researcher to access participants through community connections, making the recruitment process more feasible and efficient in this context. Data were collected through face-to-face interviews. This approach helped researcher clarify questions, ensure participants' understanding of the questionnaire, and obtain the real-time responses. Therefore, it reduced misunderstanding and also improved the accuracy and completeness of responses. Overall, the study design, sampling strategy, and data collection method were selected carefully to suit the research objectives within this vulnerable population.

5.2 Discussion of Findings

In this study, the prevalence of incomplete immunization among children (under seven years) of Myanmar migrants living in Thailand was 21.5%, indicating that approximately one in five Myanmar children did not receive vaccines according to the recommended schedule. This finding remains an important public health concern since it was lower than Thailand national EPI target aiming above 90% for all vaccines of routine childhood immunization (88).

A previous study on Myanmar migrant children in Tak Province reported suboptimal coverage, with only 56.7% completing under-1 routine immunization,

which was higher than the prevalence of incomplete immunization in this study (19). Another study conducted among Myanmar migrant children in Bangkok also reported relatively low immunization coverage, coverage ranging from 60.8% to 82.6% for individual vaccines for children under 1 year of age, and from 45.6% to 63.6% among children aged 1-2 years (41). The comparatively lower prevalence of incomplete immunization observed in the present study may partly be explained by differences in the study period and the study scopes. In addition, above studies only included younger children population and they were conducted in 2011 and 2013, more than a decade ago.

Moreover, this study identified several significant factors associated with incomplete immunization among Myanmar migrant children. After adjusting for potential confounders, six variables remained significantly associated with incomplete status of immunization: child health insurance, birth registration in Thailand, return migration history, peer practice on immunization, time and financial barriers.

5.2.1 Child's Health Insurance

According to the World Health Organization (WHO), children with health insurance coverage are more likely to receive complete immunization compared to those without insurance, as insurance reduces financial barriers and facilitates access to healthcare services (37). Similarly, a study conducted by Chamchan et al. in the special economic zone along the Thai–Myanmar border in 2022 reported that migrant children with health insurance were more likely to access healthcare services, including immunization (23). It also said that 83.2% of migrant children lacked health insurance coverage, indicating a substantial gap in protection among this population (23). Another previous evidence by Charania et al. from New Zealand has also shown that uninsured migrant children often experience delayed healthcare seeking, reduced contact with formal health systems, and lower utilization of preventive health services (55). Consistent with those findings, this study also demonstrated that child health insurance status was strongly associated with immunization completion. Children without health insurance had significantly higher odds of incomplete immunization compared to those covered under government schemes.

The association observed in this study may be explained by several mechanisms. Although routine childhood vaccines under the Thai Expanded Program

on Immunization (EPI) are provided free of charge, lack of health insurance may still reflect broader structural and administrative vulnerabilities among migrant families. Children without insurance are less likely to be connected to the formal healthcare system, resulting in reduced opportunities for routine health follow-up and health education from healthcare providers (37). In addition, uninsured migrant families may face concerns regarding healthcare costs or documentation requirements, which may discourage timely healthcare utilization even for services that are officially free of charge (64).

5.2.2 Birth Registration in Thailand

Several studies have shown that birth registration is significant in access to immunization services for children. A 2017 study conducted by Brito et al. in the Dominican Republic found that migrant Haitian children without birth certificates experienced significant delays in vaccination compared to those with certificates (51). Children without birth certificates were 13, 11, and 30 percentage points less likely to receive DTP1, OPV1, and MCV vaccines, respectively, and were 27 percentage points less likely to be fully vaccinated by 12 months of age (51). Similarly, one research along the Thai–Myanmar border by Chamchan et al. revealed that migrant children with birth certificates were more likely to possess health insurance, with 1.89 times higher odds compared to those without birth certificates, thereby improving their access to healthcare services (23). Consistent with above findings, the present study also identified Thai birth registration as a significant factor associated with immunization completion. Myanmar children without Thai birth registration had significantly higher odds of incomplete immunization.

This association may be explained by the role of birth registration in facilitating inclusion within the formal healthcare system. Children without birth registration may face administrative difficulties when enrolling in health insurance schemes and consequently when accessing healthcare service (23). Moreover, in this study, children without Thai birth registration were primarily those born in Myanmar, which may further contribute to disruptions in continuity of immunization services. These children may move between different healthcare systems and vaccination schedules in Thailand and Myanmar, increasing the possibility of incomplete documentation, loss of vaccination records, and missing the vaccine schedule (20).

5.2.3 Return Migration History

One research studied in Bangkok metropolitan area by Kantayaporn et al. in 2013, about immunization among migrant children originating from Myanmar, Lao PDR, Cambodia reported that some migrant children who frequently move or have periods of residence outside Thailand have the increased risk of missing scheduled doses (41). When children move between countries, vaccination schedules may not be consistently followed, immunization records may be lost or not transferred, and follow-up appointments may be missed. Likewise, a study among Myanmar migrant children aged 1–2 years in Tak Province by Prakunwisit et al. found that children's immunization is strongly influenced by service barriers, which can become more difficult to address when families move across locations (19). In the present study, the findings were consistent with the previous studies that children who had return migration history to Myanmar had significantly higher odds of incomplete immunization. This finding suggests that mobility and cross-border movement are critical for continuity of healthcare services among migrant populations. For migrant families, returning to their country of origin for extended periods may disrupt routine health service utilization, including childhood immunization. Additionally, caregivers may not re-enter the immunization system promptly upon returning to Thailand, leading to missed doses. Although the magnitude of association was high, this may reflect the significant impact of long-term mobility on healthcare continuity within migrant populations.

5.2.4 Peer Practice on Immunization

Previous studies have demonstrated the significant association between perceived social norms and caregivers' immunization behavior. A study from the United States of America (USA) by Tu et al. in 2023 found that parents who believed that most of their peers vaccinated their children were more likely to do the same, with children being 1.75 times more likely to be vaccinated when caregivers perceived positive peer practices (69). Similarly, the World Health Organization Behavioral and Social Drivers (BeSD) framework highlighted the important role of social processes, including social norms and peer influences, in shaping vaccination behavior (71). According to the BeSD framework, individuals' decisions to vaccinate are influenced not only by knowledge and access, but also by what they perceive others in their social

environment are doing and recommending. Perceived peer practices can therefore act as powerful motivators or barriers to immunization uptake.

Consistent with this framework, the present study found that peer practice was significantly associated with incomplete immunization among Myanmar migrant children. Caregivers who perceived that other parents did not regularly practice child immunization were more likely to have children with incomplete immunization. This association can be explained by the nature of migrant communities, where social networks often serve as key sources of information and guidance. In such settings, caregivers may rely heavily on peer experiences and shared beliefs when making health-related decisions (69).

5.2.5 Time Barrier

A global overview of systematic reviews for routine vaccination in preschool-aged children by Kaufman et al. in 2021 reported that the lack of time, competing priorities and difficulties attending health services were common reasons for incomplete immunization among parents as caregivers (79). Similarly, a retrospective cross-sectional study on the 1-2 years old children immunization coverage by Johns et al. in Malawi, East Africa pointed out that distance to health facilities and time required to reach services had negative influence immunization uptake (80). In addition, a qualitative study conducted by Canavati et al. among Myanmar migrant populations in Tak province, Thailand in 2011 found that long working hours and time limitation significantly reduced caregivers' ability to bring their children to vaccination services (21). Consistent with above findings, the present study found that time barrier was significantly associated with incomplete immunization among Myanmar migrant children.

This may be explained by the nature of migrant livelihoods, where caregivers often engage in informal or labor-intensive work with limited flexibility, making it difficult to attend health services during standard clinic hours (21). As a result, even when immunization services are available, time constraints may prevent caregivers from completing vaccination schedules. In addition, long waiting times at health facilities, transportation difficulties, and travel distance may further increase the time burden of accessing immunization services (80).

5.2.6 Financial Barrier

Financial constraints have also been recognized as a significant barrier to childhood immunization. A global overview of systematic reviews by Kaufman et al. on parental-level barriers to uptake of childhood immunization identified cost-related factors, including direct and indirect expenses such as transportation, lost wages, and service fees, as key barriers to vaccination uptake (79). Likewise, two studies, one by Hajizadeh et al. (2018) focused on low- or middle-income countries and another by Adebawale et al. (2019) done in core-North Nigeria, have demonstrated that children from lower socioeconomic households are less likely to be fully immunized, highlighting the role of economic inequality in access to vaccination services (60, 61). Moreover, in the context of migrant populations, a study on Myanmar migrant caregivers in Thailand explained that the financial barriers may be further exacerbated by unstable income and limited access to social protection systems (21). In alliance with above findings, the present study found that financial barrier was significantly associated with incomplete immunization among Myanmar migrant children.

This should be explained by both direct and indirect costs associated with accessing immunization services. Although routine childhood vaccines are provided nearly free of charge in Thailand, caregivers may still face additional expenses such as transportation costs, loss of daily income, cost for interpreter service or administrative costs related to healthcare access (79). These financial burdens may discourage caregivers from completing vaccination schedules, particularly among migrant families with limited and unstable income.

5.3 Conclusion

Approximately one in five children were found to experience incomplete vaccination, indicating existing gaps in access and continuity of services especially within vulnerable migrant children.

Six factors were independently associated with incomplete immunization. They are lack of Thai birth registration, absence of child health insurance, child's return migration history, lack of peer practice, time barrier and financial barrier to access the immunization services. These findings demonstrate that immunization completion

among migrant children is influenced by a combination of structural, migration, social and system-related factors. Legal and administrative factors such as birth registration and health insurance play a crucial role in facilitating inclusion within the formal healthcare system, while peer practice shapes caregiver's immunization behavior. Moreover, barriers to accessing immunization services including financial constraints, and time limitations further hinder timely vaccination uptake. Finally, cross-border mobility and prolonged absence from Thailand significantly disrupt continuity of care, increasing the risk of incomplete immunization.

Overall, this study highlights that improving immunization coverage among Myanmar migrant children requires across all three levels of the modified socio-economic model: intrapersonal, interpersonal, and institutional levels. Interventions addressing the legal access, health insurance, outreach immunization, healthcare system responsiveness and cross-border continuity of care are recommended. Strengthening these components may contribute to reducing vaccination gaps and improving health equity among migrant populations.

Although some health system-related variables were not statistically significant in the final model, they remain important in understanding the broader context of immunization access among migrant populations. Factors such as reminder system, interpreter support, and health information about immunization may play a critical role in strengthening caregivers' ability to utilize immunization services. Considering these elements alongside the significant findings provides a more comprehensive understanding of the barriers within the healthcare system.

5.4 Limitations and Strengths of the Study

This study has several limitations. First, the cross-sectional study design can only capture data at a single point in time and limits the ability to establish causal relationships between the identified factors and incomplete immunization. Second, the data were collected by interviewing with caregiver self-report, which may be subject to recall bias and social desirability bias, particularly regarding interpersonal and institution related factors. Third, the use of snowball sampling may have introduced

selection bias, as participants were recruited through existing social networks. This approach may result in overrepresentation of individuals with similar socio-demographic characteristics or health behaviors, potentially limiting the representativeness of the sample. Fourth, the analysis did not account for clustering of children within caregivers as the data were collected from caregivers, and a single caregiver could provide information for more than one child. Due to the absence of unique identifiers, the exact number of caregivers could not be determined and it may affect the precision of estimates. Fifth, some variables included in the analysis showed relatively wide confidence intervals, which may be due to the small number of participants in certain subgroups and the strong magnitude of association. Finally, the study was conducted among Myanmar migrant populations in a specific geographic area, which may limit the generalizability of the findings to other migrant populations or settings with different socio-demographic and healthcare contexts.

Nevertheless, this study has many strengths as well. First, it applied a modified socio-ecological framework to comprehensively examine associated factors and understand a bigger picture of the issue. Second, it focused on a hard-to-reach and vulnerable population of Myanmar migrant caregivers and their children, thereby generating context-specific evidence that is often limited in existing literature. Third, the use of validated and pilot-tested questionnaires ensured the reliability and consistency of the collected data. Finally, the study employed multivariable logistic regression analysis to control for potential confounding factors, enhancing the validity of the findings.

5.5 Recommendations

Following recommendations are based on the findings and the framework of this study.

5.5.1 Recommendation for Intrapersonal Level

At intrapersonal level, some of the findings are more of structural problems rather than individual behaviors. Therefore, Myanmar migrant caregivers should be encouraged to overcome structural barriers such as lack of health insurance and birth

registration. Public health professionals and local healthcare providers should be responsible to strengthen health education regarding the importance of health insurance, continuity of vaccination schedules, and long-term benefits of preventive healthcare services. Regarding health insurance, caregivers should be encouraged to enroll their children in appropriate health insurance schemes. Special attention should be given to older migrant children, as changes in health insurance eligibility and increasing insurance costs after the age of seven may create additional financial barriers to healthcare access. Therefore, healthcare providers and relevant authorities should strengthen support mechanisms and provide clear guidance for caregivers regarding available insurance options and renewal processes for school-aged migrant children. To strengthen birth registration, healthcare professionals and hospital authorities should actively encourage caregivers to register their children at birth and ensure that registration data are securely recorded and maintained. This is particularly important as some caregivers may lose official documents due to mobility or other challenges. In case of return migration to Myanmar, immigration officers and public health personnel should collaborate together to inform caregivers to safeguard immunization records and seek guidance from local health facilities upon returning to Thailand to continue the vaccination schedule without delay. In addition, mechanisms to track immunization records such as electronic pink books and cross-border hospital collaboration for children who travel between Thailand and Myanmar should be strengthened to reduce loss to follow-up.

5.5.2 Recommendation for Interpersonal Level

At the interpersonal level, strengthening positive social norms and peer influence is essential. As this study demonstrated the significant role of peer practice in shaping immunization behavior, community-based interventions are keys and they should be performed by stakeholders such as public health professionals, district health authorities, migrant community leaders, and migrant health volunteers (MHV). Trusted social networks should be built to promote positive attitudes toward vaccination. Engaging community leaders, migrant volunteers, and peer educators can help spread accurate information and boost complete immunization practices within migrant communities. Migrant health volunteers are assets as they can be trained for culturally appropriate education and counseling to migrant families regarding immunization

schedules and benefits. They may also serve as a bridge between migrant communities and healthcare facilities by assisting with appointment reminders, translation support, and follow-up for children who miss scheduled vaccinations. Strengthening community outreach activities may help address communication barriers and improve trust between migrant families and the healthcare system.

5.5.3 Recommendation for Institutional Level

At the institutional level, health authorities should address service-related barriers, particularly time and financial constraints, which were found to be significantly associated with incomplete immunization in this study. To reduce time-related barriers, district health authorities in collaboration with public health professionals should strengthen community outreach strategies, such as organizing community-based vaccination programs or periodic immunization campaigns, where services are delivered directly within migrant communities. These approaches can reduce the need for caregivers to travel long distances or take time off work, thereby improving service accessibility. For financial barriers, particularly indirect costs such as transportation expenses, loss of daily income, and fees for purchasing interpreter services, should be minimized. In both provincial hospital and district health centers, communication strategies should be upgraded by providing accessible and culturally appropriate interpreter services to ensure effective interaction between healthcare providers and migrant caregivers. Strengthening interpreter support within health facilities can improve understanding, build trust, and encourage greater utilization of immunization services.

5.5.4 Recommendation for Policy Makers

Policymakers should consider expanding inclusive health insurance policies to ensure migrant children are covered under accessible and affordable schemes. Policies that simplify birth registration procedures for migrant families may also improve access to routine immunization services. Furthermore, cross-border collaboration between Thailand and Myanmar health authorities may help improve continuity of vaccination records and reduce immunization gaps among mobile populations.

5.5.5 Recommendation for Future Research

Future research should explore longitudinal follow-up of migrant children to better understand the impact of mobility on vaccination continuity. As this study

focused on only three levels of the socio-ecological framework, broader community and policy-level factors may also influence immunization outcomes and should be explored. Qualitative studies should also be conducted to further examine communication barriers between healthcare providers and migrant caregivers. Additionally, research evaluating interventions such as interpreter services, mobile vaccination programs, or digital immunization tracking systems may provide evidence for effective strategies to improve vaccination coverage among migrant populations.



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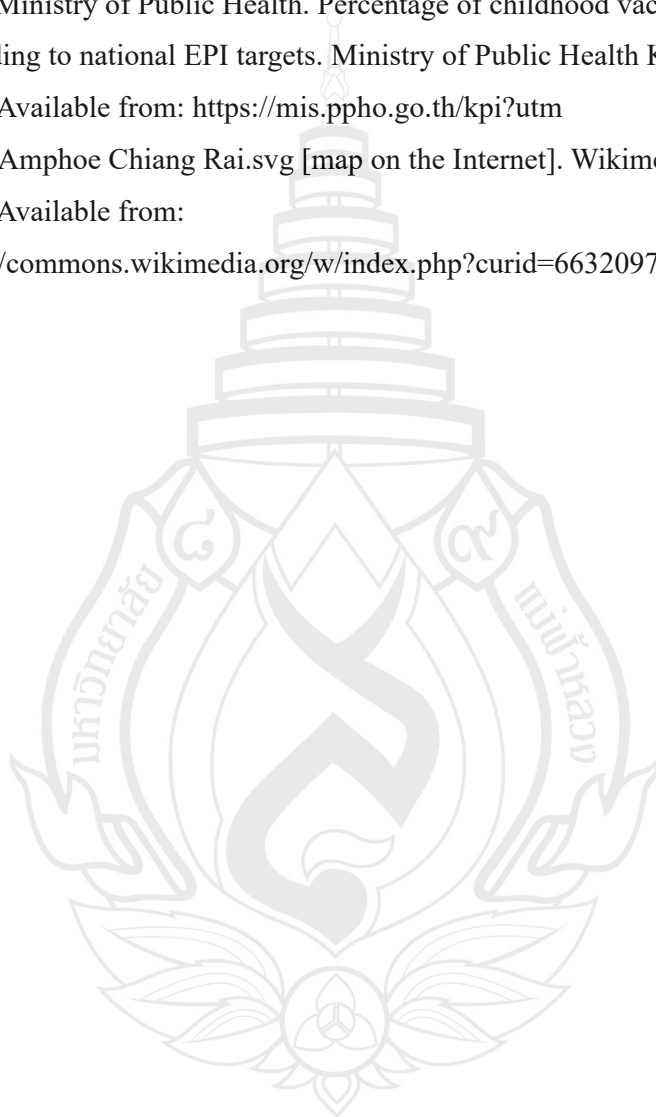
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APPENDIX A

ETHICAL APPROVAL CERTIFICATE (THAI VERSION)



The Mae Fah Luang University Ethics Committee on Human Research
333 Moo 1, Thasud, Muang, Chiang Rai 57100
Tel: (053) 917-170 to 71 Fax: (053) 917-170 E-mail: rec.human@mfu.ac.th

หนังสือรับรองด้านจริยธรรมการวิจัย

COA: 202/2025

รหัสโครงการวิจัย: EC 25133-18

ชื่อโครงการวิจัย : ปัจจัยที่มีความสัมพันธ์กับสถานการณ์ได้รับวัคซีนของเด็กอพยพโยกย้ายถิ่นฐานชาว
เมียนมาในจังหวัดเชียงราย ประเทศไทย

ชื่อผู้วิจัยหลัก: Miss Shin Moe Oo

สำนักวิชา: วิทยาศาสตร์สุขภาพ

ผู้สนับสนุนการวิจัย: ทูสนับสนุนเพื่อทำวิทยานิพนธ์ สำหรับนักศึกษามหาวิทยาลัยแม่ฟ้าหลวง

การรับรอง :

- | | |
|--|----------------------------------|
| (1) โครงการวิจัย | ฉบับที่ 3 วันที่ 10 ตุลาคม 2568 |
| (2) เอกสารข้อมูลและขอความยินยอมเข้าร่วมการวิจัย (อังกฤษและเมียนมาร์) | ฉบับที่ 3 วันที่ ตุลาคม 2568 |
| (3) แผนพับ (อังกฤษและเมียนมาร์), แบบสอบถาม (เมียนมาร์) | ฉบับที่ 2 วันที่ 9 กันยายน 2568 |
| (4) เอกสารโฆษณา (อังกฤษและเมียนมาร์), แบบสอบถาม (อังกฤษ) | ฉบับที่ 1 วันที่ 27 พฤษภาคม 2568 |
| (5) ผู้วิจัย และผู้วิจัยร่วม | - Miss Shin Moe Oo |
| - ผศ. ดร.ภมรศรี อินทร์ชน | - ผศ. ดร.พีรณย์ ศรีจันทร์ |

ขอรับรองว่าโครงการดังกล่าวข้างต้นได้ผ่านการพิจารณารับรองจากคณะกรรมการจริยธรรมการวิจัย
ในมนุษย์ มหาวิทยาลัยแม่ฟ้าหลวง ว่าสอดคล้องกับแนวทางจริยธรรมสากล ได้แก่ ปฏิญญาเฮลซิงกิ (Declaration
of Helsinki) รายงานเบลมอนต์ (Belmont Report) แนวทางจริยธรรมสากลสำหรับการวิจัยในมนุษย์ของสภา
องค์การสากลด้านวิทยาศาสตร์การแพทย์ (CIOMS) และแนวทางการปฏิบัติการวิจัยที่ดี (ICH-GCP)

วันที่รับรองด้านจริยธรรมของโครงการวิจัย: 19 ตุลาคม 2568

วันสิ้นสุดการรับรอง: 18 ตุลาคม 2569

ความถี่ของการส่งรายงานความก้าวหน้าของการวิจัย: 1 ปี

ลงนาม

(อาจารย์ นพ.จุลพงศ์ อจลพงศ์)

ประธานคณะกรรมการจริยธรรมการวิจัยในมนุษย์ มหาวิทยาลัยแม่ฟ้าหลวง

APPENDIX B

ETHICAL APPROVAL CERTIFICATE (ENGLISH VERSION)



The Mae Fah Luang University Ethics Committee on Human Research
333 Moo 1, Thasud, Muang, Chiang Rai 57100
Tel: (053) 917-170 to 71 Fax: (053) 917-170 E-mail: rec.human@mfu.ac.th

CERTIFICATE OF APPROVAL

COA: 202/2025

Protocol No: EC 25133-18

Title: Factors associated with immunization status among children of Myanmar migrants in Chiang Rai province, Thailand

Principal investigator: Miss Shin Moe Oo

School: Health Science

Funding support: graduate thesis grant, Mae Fah Luang University

Approval:

1) Research protocol	Version 3 Date October 10, 2025
2) Information sheet and informed consent documents (EN & Myanmar)	Version 3 Date October 10, 2025
3) Leaflets (EN & Myanmar), Questionnaire (Myanmar)	Version 2 Date September 9, 2025
4) Advertisement (EN & Myanmar), Questionnaire (EN)	Version 1 Date May 27, 2025
5) Principal investigator and Co-investigators	- Miss Shin Moe Oo
- Asst. Prof. Dr. Pamornsri Inchon	- Asst. Prof. Dr. Peeradone Srichan

The aforementioned documents have been reviewed and approved by the Mae Fah Luang University Ethics Committee on Human Research in compliance with international guidelines such as Declaration of Helsinki, the Belmont Report, CIOMS Guidelines and the International Conference on Harmonization of Technical Requirements for Registration of Pharmaceuticals for Human Use - Good Clinical Practice (ICH - GCP)

Date of Approval:

October 19, 2025

Date of Expiration:

October 18, 2026

Frequency of Continuing Review:

1 year



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(Jullapong Achalapong, M.D.)

Chairperson of the Mae Fah Luang Ethics Committee on Human Research

AL 02_1/2024 Certificate of Approval

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APPENDIX C

INFORMATION SHEET AND INFORMED CONSENT FORM (ENGLISH VERSION)

Version 3 Date 10/10/2025

AP 03_1/2024

Information Sheet and Informed Consent

Research Project Title: FACTORS ASSOCIATED WITH IMMUNIZATION STATUS AMONG CHILDREN OF MYANMAR MIGRANTS IN CHIANG RAI PROVINCE, THAILAND

Principal investigator: Shin Moe Oo

Affiliation: Mae Fah Luang University

Advisor: Assistant Professor Dr. Pamornsri Inchon

Source of Research Funding/Sponsor: Postgraduate studies scholarship

1. Introduction and Project Summary

My name is Shin Moe Oo, and I am conducting a research project "FACTORS ASSOCIATED WITH IMMUNIZATION STATUS AMONG CHILDREN OF MYANMAR MIGRANTS IN CHIANG RAI PROVINCE, THAILAND" as part of my academic study in public health, specializing in border health management. This study aims to identify the immunization status and its factors associated among Myanmar migrant children in Chiang Rai Province. I would like to invite you to participate in this research. Each participant will be asked questions from a structured questionnaire in an interview by the principal investigator, which would last around 20–30 minutes.

Although there is no major risk, some questions may cause mild discomfort, especially those about documentation issues. Since it will be conducted in a private setting, this is unlikely to occur. However, if you do feel uncomfortable at any point during the process, you have the option to stop answering the questions and withdraw from the study. After the interview, you will receive a brochure with information on vaccines and nearby immunization services. Moreover, this study can help improve healthcare for migrant children in the future.

Your participation is completely voluntary. If you choose not to participate, your services or benefits will not be affected in any way. All information you provide will be kept confidential. Your name or personal details will not appear in any report or publication. If you have any questions, you may ask me at any time. I am here to protect your rights and ensure your comfort during the study.

2. A statement indicating that this is a research project and that the participation in this research is voluntary

Before you decide, please read the following information carefully.

Your participation in this research is based on your voluntary decision.

- You have the freedom to decide whether to participate in this research or not.
- You can consult with your family or your physician before making decision. You may also ask any questions; the researcher will provide explanation and answers until you have a clear understanding.

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- After deciding to participate in this research, you still have the right to withdraw at any time.

3. Rationale and Significance of the Research

This research addresses immunization status and its associated factors of Myanmar migrant children living in Chiang Rai Province, Thailand. Despite the availability of vaccines, many migrant children remain under-vaccinated due to barriers such as lack of documentation, language differences, and limited access to healthcare. These issues increase the risk of vaccine-preventable disease outbreaks, affecting both migrant and host communities. While earlier studies have explored this issue in Tak and Bangkok, there is limited evidence from Chiang Rai, a rapidly growing destination for migrants that presents unique challenges. This study aims to fill those gaps. By identifying the factors that influence immunization among migrant children, the findings will support the development of more effective and inclusive vaccination strategies. Ultimately, this research contributes to improving child health, strengthening public health systems, and achieving national and global goals such as SDG 3 and SDG 10.

4. Qualifications and Number of Participants

Individuals who meet the criteria as being Myanmar migrant caregivers aged 15 years and above with children aged under 7 years, residing in Chiang Rai province, being able to communicate in Myanmar language are invited. Individuals who have serious mental or physical disabilities such as hearing loss, and those have children with medical contraindication to immunization will be excluded from the study. A total of 430 participants will be included.

5. Research Objectives

The objectives of this research are to determine the immunization status and identify the associated factors with immunization status among children of Myanmar migrant (aged under 7 years) in Chiang Rai province, Thailand.

6. Research Design

This research will use a community-based cross-sectional study design and be conducted in two districts of Chiang Rai province, Mueang and Mae Sai districts. Data will be collected using structured questionnaires by face-to-face interview at the participant's residence or community assembly areas, ensuring privacy and according to their availability.

7. Research Procedure and Duration of Participation

7.1 Invitation

I am inviting all Myanmar migrant caregivers who have children aged under 7 years and reside in the communities of Mueang District and Mae Sai District of Chiang Rai Province, Thailand, to participate in this study. For participants under the age of 18 are considered minors and therefore require written consent from a parent or legal guardian before participating in this study.

7.2 Interview

You will need to answer questions in the interview which will take around 20-30 minutes.

7.3 Questionnaire

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It will assess your children's immunization status, your knowledge and attitude about immunization and other possible factors such as social and healthcare.

8. Potential Risks and Discomfort from Participating in the Research

Although there is no major risk, some questions may cause mild discomfort, especially those about legal status. Sitting for the interview and answering the questions may also take your personal time for a while. If you experience any distress during the study, you are welcomed to speak freely to the researchers. You have the right to withdraw from the study at any time and your decision to withdraw will not affect your involvement in any other activities.

9. Potential Benefits of Participating in the Research

You will not receive direct benefits from participating, but you may gain a better understanding of your child's immunization status and will receive a brochure which include helpful information about vaccines and services. Moreover, the research findings may benefit your society by contributing to improve migrant friendly immunization services and develop better interventions, policies, or programs aimed at promoting immunization coverage and prevent vaccine-preventable disease outbreaks.

10. Alternatives if Choosing NOT to Participate

If you choose not to participate, there will be no penalty or loss of benefits to which you are otherwise entitled. You will still have full access to medical care and social support from local healthcare providers, migrant health volunteers, and community organizations as usual.

11. Guidelines for Managing Situations that May Arise during the Research

Situations	Guidelines
If you decide to withdraw during the research	If you decide to withdraw from the study at any point, you can do so without any consequences. Please inform the researcher, and your participation will end immediately.
If there is new information regarding the research or your safety	The researcher will promptly inform you of any new information that may affect your safety or the study. You can then decide whether to continue participating or withdraw from the research.
The criteria for ending participation may include completion of the study protocol, reaching a predetermined time limit, or achieving a target sample size.	If any of these criteria are met, the researcher will notify participants accordingly and conclude their participation in the research. Any data collected up to that point will be securely stored and analyzed as part of the study.

12. Potential Benefits after the Completion of the Research

Upon completion, this study will provide insights into the barriers and facilitators to childhood immunization among Myanmar migrant children in Chiang Rai. The findings can help

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health authorities, NGOs, and community workers develop more inclusive vaccination programs, inform policy improvements, and promote equitable access to immunization. They will also benefit academic and public health efforts in similar migrant or border settings.

13. Confidentiality of Data and Limitations

The confidentiality of your data will be strictly maintained throughout the study. To ensure your privacy, all participant data will be anonymized. Data will be securely stored and retained for 5 years after the completion of the study to allow for analysis, publication, and verification if required. After this period, both paper and electronic data will be permanently destroyed. Some approved individuals, such as ethics committee members or government auditors, may review your data to ensure research accuracy, but your information will only be used for this study. Results will be reported in a way that prevents identification, and no confidential details will be disclosed. In compliance with these ethical considerations, we aim to safeguard your rights as a participant while achieving meaningful outcomes that contribute to public health improvements for Myanmar migrant children in Chiang Rai Province.

14. Reimbursement for Participation

Participants will receive a brochure as a gesture of thanks, sharing valuable information about nearby available immunization services, importance of immunization along with keeping the records of it, potential vaccine side effects and how to manage them appropriately.

15. Expenses that the participants must bear

There are no expenses that the participant must bear in this study.

16. Care and Compensation Guidelines if the participants experience harm or adverse effects from participating in the research

This study involves minimal risk and does not include any medical intervention or procedures. Therefore, no physical harm is anticipated. However, if participants experience psychological discomfort or distress during the interview (e.g., due to sensitive topics such as legal status), they will be allowed to skip questions or withdraw at any point without any consequence. The researcher will ensure a respectful and supportive environment throughout data collection. If any harm arises as a direct result of participating in the study, the principal investigator will report the incident to the ethics committee, and appropriate steps will be taken in line with institutional guidelines.

17. Contact Person in Case of Questions or Concerns

If you have any questions or concerns regarding the research or safety during participation, you can ask the researcher directly

Principal investigator

Name: Shin Moe Oo

Mobile: 0957749553

E-mail: 6751804004@lamduan.mfu.ac.th

Advisor

Version 3 Date 10/10/2025

AP 03_1/2024

Name: Asst. Prof. Dr. Pamornsri Inchon

Mobile: 66-93-1362990

E-mail: pamornsri.sri@mfu.ac.th

If you have questions regarding your rights, you can contact the Mae Fah Luang University Ethics Committee on Human Research at the Academic Service building (AS), 4th floor, tel. (053) 917-170 to 1 or (053) 916-551, fax. (053) 917-170, or e-mail: rec.human@mfu.ac.th to ensure that your rights, your safety, and your well-being are protected under the international standards of human-research ethics.



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THE MAE FAH LUANG UNIVERSITY
ETHICS COMMITTEE ON HUMAN RESEARCH

19 OCT 2025

APPROVED

Version 3 Date 10/10/2025

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Informed Consent Form

I, _____, have decided to participate in the research project titled "FACTORS ASSOCIATED WITH IMMUNIZATION STATUS AMONG CHILDREN MIGRANT IN CHIANG RAI PROVINCE, THAILAND". I have received information and explanations about this research, and I have had the opportunity to ask questions and receive satisfactory answers. I have had sufficient time to read and understand the information provided in the documents thoroughly and have decided to participate in this research.

I understand that I have freedom to choose not to participate in this research. I can withdraw from this research at any time without any impact on my care or rights that I am entitled to.

By signing this document, I do not waive any rights that I am entitled to under the law, and after signing, I will receive a copy of the information sheet and the informed consent.

Participant's (Consentee) Signature _____ Date _____

(_____)

Principal investigator's (Consentor) Signature _____ Date _____

(_____)

For participants who can hear and understand but cannot read

Although I cannot read, the researcher has read this information sheet and I understand the consent form that was informed to me. I hereby voluntarily sign or affix my fingerprint.

Participant's sign/ fingerprint _____ Date _____

(_____)

Consent requester _____ Date _____

(_____)

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ETHICS COMMITTEE ON HUMAN RESEARCH

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Testimony of a non-participant in the research**(If the participant cannot read but can understand by listening)**

I was present during the consent request process and I confirm that the information sheet has read/explained by the consent requester.

The above-mentioned individual was given the opportunity to ask questions and decided to participate voluntarily after understanding the information in this document.

Testimony's signature _____

Date _____

Parental/ legal guardian consent form for participants aged under 18 years

(In the case of volunteers under 18 years of age, they must be given special protection.)

I, as a _____ of research participants, I have read the above message and have a good understanding of everything. I give my consent for Mr./Miss/Mr./Ms. _____ to participate in this research voluntarily. Therefore, I signed this consent document.

Parent/Guardian's Name: _____

Signature: _____

Date: _____

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THE MAE FAH LUANG UNIVERSITY
ETHICS COMMITTEE ON HUMAN RESEARCH

19 OCT 2025

APPROVED

APPENDIX D

INFORMATION SHEET AND INFORMED CONSENT FORM (MYANMAR VERSION)

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သုတေသနအချက်အလက်နှင့် သဘောတူညီမှု

သုတေသနလုပ်ငန်းခေါင်းစဉ်- ထိုင်းနိုင်ငံ၊ ချင်းလိုင်ပြည်နယ်ရှိ မြန်မာရွှေပြောင်းနေထိုင်သူတို့၏ ကလေးငယ်များကြားကာကွယ်ဆေးထိုးနှံမှုအခြေအနေနှင့် ဆက်စပ်နေသောအချက်များ
အဓိကစုံစမ်းစစ်ဆေးသူ - ရှင်မိုးဦး
တက္ကသိုလ် ဌာန/ အဖွဲ့အစည်း - ကျန်းမာရေးသိပ္ပံကျောင်း၊ မယ့်ဖာလွမ်တက္ကသိုလ်
သုတေသန အကြံပေးသူ- ဒေါက်တာ Pamornsi Inehon
သုတေသန ရန်ပုံငွေ/ အထောက်အပံ့ပေးသူ - မယ့်ဖာလွမ်တက္ကသိုလ်

THE MAE FAH LUANG UNIVERSITY
ETHICS COMMITTEE ON HUMAN RESEARCH
19 OCT 2025
APPROVED

၁။ မိတ်ဆက်ခြင်းနှင့် သုတေသနအကျဉ်းချုပ်

ကျွန်ုပ်၏အမည်မှာ “ရှင်မိုးဦး” ဖြစ်ပြီး ကျွန်ုပ်သည် ထိုင်းနိုင်ငံ၊ ချင်းလိုင်ပြည်နယ်ရှိ နယ်စပ် ကျန်းမာရေးဆိုင်ရာ စီမံခန့်ခွဲမှုအထူးပြုညာရပ်ဆိုင်ရာ လေ့လာချက်၏ တစ်စိတ်တစ်ပိုင်းအနေ ဖြင့် “ မြန်မာရွှေပြောင်းနေထိုင်သူတို့၏ ကလေးငယ်များကြားကာကွယ်ဆေးထိုးနှံမှုအခြေအနေနှင့် ဆက်စပ်နေသောအချက်များ” ကိုအကောင်အထည်ဖော် ဆောင်ရွက်လျက်ရှိပါသည်။ ဤလေ့လာမှုသည် ချင်းလိုင်ပြည်နယ်ရှိ မြန်မာရွှေပြောင်းနေထိုင်သူများကြားတွင် ကာကွယ်ဆေးထိုးခြင်းအခြေ အနေနှင့် ၎င်း၏ပက်သက်ဆက်သွယ်နေသောအကြောင်းရင်းများကို ဖော်ထုတ်ရန် ရည်ရွယ်ပါသည်။ သုတေသနတွင် ပါဝင်ဖို့မိတ်ခေါ်ပါသည်။ လေ့လာမှုတွင်ပါဝင်သူတိုင်းအား ခန့်မှန်းခြေ (၂၀-၃၀) မိနစ်ခန့်ကြာချိန်အတွင်း စုံစမ်းစစ် ဆေးသူမှဖွဲ့စည်းထားသော မေးခွန်းလွှာကိုအသုံးပြု၍ တွေ့ဆုံမေးမြန်းပါမည်။ ဤသုတေသနတွင် ပါဝင်ခြင်းသည် အန္တရာယ်ကြီးကြီးမားမားမရှိသော်လည်း အချို့မေးခွန်းများ၊ အထူးသဖြင့် စာရွက်စာတမ်းဆိုင်ရာအခြေအနေကဲ့သို့သော အကြောင်းအရာများသည် စိတ်ပိုင်းဆိုင်ရာမသက်သာမှု ဖြစ်စေနိုင်ပါသည်။ သီးသန့်နေရာတွင်တွေ့ဆုံမေးမြန်းမည်ဖြစ် သောကြောင့် စိတ်ပူရန်မလိုအပ်သော်လည်း လုပ်ငန်းစဉ်အတွင်း မည်သည့် အချိန်တွင်မဆိုအဆင်မပြေစားရပါက၊ မေးခွန်းဖြေဆိုခြင်းကိုရပ်ပြီး လေ့လာမှုမှထွက်ရန်ရွေးချယ်ခွင့်ရှိပါသည်။ တွေ့ဆုံမေးမြန်းမှုအပြီးတွင်ကာကွယ်ဆေးများနှင့်ဆေးဝန်ဆောင်မှုများအကြောင်းတန်ဖိုးရှိသည့်အချက်အလက်များ ပါရှိသောလက်ကမ်းစာစောင်ကိုလက်ခံရရှိမည်ဖြစ်ပါသည်။ ထို့အပြင် သုတေသနတွေ့ရှိချက်များသည်နောင်လာမည့်အ နာဂတ်တွင်မြန်မာ ကလေးငယ်များအတွက် ပိုမိုကောင်းမွန်သောကျန်းမာရေးအစီအစဉ်များ ဖြစ်ထွန်းလာစေရန် ကူညီပေးနိုင်ပါသည်။

မပါဝင်ရန်ရွေးချယ်ပါက ဆိုးကျိုးများမရှိပါ။ သင်သည် ပုံမှန်အတိုင်းတူညီသော ကျန်းမာရေးစောင့်ရှောက်မှုနှင့် ဝန်ဆောင်မှုများကိုဆက်လက်ရရှိမည်ဖြစ်ပြီး သင်၏ဆုံးဖြတ်ချက်ကို အပြည့်အဝလေးစားမည်ဖြစ်ပါသည်။ မည်သည့် အဆင့်တွင်မဆို မေးခွန်းများ သို့မဟုတ် စိုးရိမ်ပူပန်မှုများရှိပါက ကျွန်ုပ်တို့ ဆက်သွယ်ပါ။ လေ့လာမှုတစ်လျှောက်လုံး သင်၏လူသားအခွင့်အရေးများနှင့် ဂုဏ်သိက္ခာတို့ကို အပြည့်အဝကာကွယ်ပေးကြောင်း သေချာစေရန်အတွက် ကျွန်ုပ်အမြဲရှိ နေပါမည်။

၂။ သင်အား ဤသုတေသနတွင် ပါဝင်ရန် မိတ်ခေါ်လိုပါသည်။ သုတေသနတွင် ပါဝင်ခြင်းနှင့် သက်ဆိုင်သော အရေးပါသည့် အချက်အလက်များ ပါဝင်သော ဤစာရွက်စာတမ်းကို ကျေးဇူးပြု၍ အချိန်ယူ ဖတ်ရှုပါ။

ဤသုတေသနတွင် သင်၏ပါဝင်မှုသည် သင်၏ဆန္ဒအလျောက် ဆုံးဖြတ်ချက်အပေါ် အခြေခံ သည်။

• ဤသုတေသနတွင် ပါဝင်ခြင်း ရှိ၊ မရှိ ဆုံးဖြတ်ရန် သင့်တွင် လွတ်လပ်စွာ ဆုံးဖြတ်ပိုင်ခွင့်ရှိပါသည်။

• ဆုံးဖြတ်ချက်မချမီ သင့်မိသားစု သို့မဟုတ် သင့်ဆရာဝန်နှင့် တိုင်ပင်ဆွေးနွေးနိုင်ပါသည်။

သင်သည်လည်း မေးခွန်းများစွာမေးနိုင်ပါသည်။ သုတေသီသည် သင့်အား ရှင်းလင်းစွာ နားလည်သည့် အထိ ရှင်းလင်းချက်များနှင့်အဖြေများကို ပေးပါလိမ့်မည်။

• ဤသုတေသနတွင် ပါဝင်ရန် ဆုံးဖြတ်ပြီးသော်လည်း သင်သည် အချိန်မရွေး ရုပ်သိမ်းပိုင်ခွင့်ရှိပါသည်။

၃။ သုတေသန၏ ရည်ရွယ်ချက်နှင့် အရေးပါမှု

ဤသုတေသနသည် ထိုင်းနိုင်ငံ၊ ချင်းလင်းပြည်နယ်တွင်နေထိုင်သော မြန်မာကလေးငယ် များ၏ ကာကွယ်ဆေးထိုးခြင်းအခြေအနေနှင့်၎င်း၏ဆက်စပ်အချက်များကို ဖော်ထုတ်ရန်ဖြစ်သည်။ ရွှေ့ပြောင်းနေထိုင်သူ ကလေးငယ်များသည် စာရက်စာတမ်းပြဿနာများ၊ ဘာသာစကားကွဲပြားမှု နှင့် ကျန်းမာရေးစောင့်ရှောက်မှု လက်လှမ်း မီမှုတွင် ကွာဟချက်များကို သို့သော် အတားအဆီးများကြောင့် အသက်အရွယ်အလိုက်ထိုးသင့်သော ကာကွယ်ဆေးများ မရရှိနေကြပါ။ ထို့ပြင်သုတေသနသည် ရွှေ့ပြောင်း နေထိုင်သူများသာမက အိမ်ရှင်အသိုင်းအဝိုင်းများအတွက်ပါ ကာကွယ်ဆေး ဖြင့်ကြိုတင်ကာ ကွယ်နိုင်သော ရောဂါများကိုဖြစ်ပွားစေနိုင်သည်။ မြန်မာရွှေ့ပြောင်းကလေးငယ်များ ကာကွယ်ဆေးထိုး ခြင်းနှင့်ပတ်သက် သည့် ယခင်လေ့လာမှုများမှာ လွန်ခဲ့သောဆယ်စုနှစ်တစ်ခုကျော်က တက်ခံပြည်နယ်နှင့် ဘန်ကောက် ကဲ့သို့သောဒေသများ တွင်သာ ပြုလုပ်ခဲ့ပြီး ရွှေ့ပြောင်းနေထိုင်သူဦးရေ လျင်မြန်စွာတိုးပွားလာပြီး ချင်းလင်းကဲ့သို့ လူကြိုက်များသည့် နေရာအသစ်တွင်မူ လေ့လာထားခြင်းမရှိပါ။ အဆိုပါ ကွက်လပ်များကို ဖြည့်ဆည်းခြင်းဖြင့်၊ ဤလေ့လာမှုသည် ချင်းလင်းရှိ မြန်မာရွှေ့ပြောင်းကလေးငယ်များ၏ ကာကွယ် ဆေးထိုးခြင်းအခြေအနေနှင့် အလားအလာရှိသည့်သတ်မှတ်ချက်များကို ရှာဖွေဖော်ထုတ်ပေးပါမည်။ ထို့အပြင်ကလေးကာကွယ်ဆေးထိုးခြင်း အတွက် အတားအဆီးများကိုဖော်ထုတ်ခြင်းဖြင့်၊ ဤလေ့လာမှုသည် ပိုမိုထိရောက်၍ ရွှေ့ပြောင်းနေထိုင် သူများအတွက် လွယ်ကူသော ကာကွယ်ဆေးထိုးခြင်း အစီအစဉ်များ ကို ပံ့ပိုးပေးပြီး နောက်ဆုံးတွင် နိုင်ငံတော်နှင့် ကမ္ဘာလုံးဆိုင်ရာ ဖွံ့ဖြိုးတိုးတက်ရေးပန်းတိုင်များနှင့်အညီ ပိုမို ကောင်းမွန်သော ကျန်းမာရေးရလဒ်များကို ပံ့ပိုးကူညီပေးမည်ဖြစ်ပါသည်။

၄။ သုတေသနတွင်ပါဝင်ရန် အရည်အချင်းများနှင့် ပါဝင်သူအရေအတွက်

ချင်းလင်းပြည်နယ်တွင်နေထိုင်သောအသက်(၇)နှစ်အောက်(မွေးကင်းစမှ ၇ နှစ်မပြည့်ခင်အထိ) မြန်မာကလေး ငယ်ရှိသည့် အသက်(၁၅)နှစ်အထက် မြန်မာနိုင်ငံသားစောင့်ရှောက်သူအားလုံး သတ်မှတ်ချက်အရပါဝင်ခွင့်ရှိသည်။ မြန်မာဘာသာစကားဖြင့်ဆက်သွယ်ပြောဆိုနိုင်သောပုဂ္ဂိုလ်များဖြစ်ရပါမည်။ စိတ်ပိုင်းဆိုင်ရာ (သို့) ရုပ်ပိုင်းဆိုင်ရာ မကျန်းမာသောစောင့်ရှောက်သူများ (ဥပမာ - အကြားအာရုံချို့တဲ့နေသူများ)၊ ကာကွယ်ဆေးမထိုးရန်ဆေးဘက်ဆိုင်ရာ တားမြစ်ထားသောကလေးများကိုလေ့လာမှုမှဖယ်ထုတ်ပါမည်။ စုစုပေါင်း(၄၃၀)ဦးပါဝင်မည်ဖြစ်သည်။

၅။ သုတေသန၏ ရည်ရွယ်ချက်များ

ဤသုတေသန၏ရည်ရွယ်ချက်မှာ ချင်းလင်းပြည်နယ်တွင်ရှိသော မြန်မာကလေးငယ်များ၏ ကာကွယ်ဆေး ထိုးခြင်းအခြေအနေနှင့် ၎င်း၏ပက်သက်ဆက်သွယ်နေသော အကြောင်းရင်းများကို ဖော်ထုတ်ရန်ဖြစ်ပါသည်။

၆။ သုတေသနအမျိုးအစား

ဤသုတေသနသည်အချိန်အပိုင်းအခြားတစ်ခုအတွင်းမှအချက်အလက်များအပေါ်အခြေခံသောရုပ်ရှုအခြေ ပြုသုတေသနအမျိုးအစားကိုအသုံးပြုကာချင်းလင်းပြည်နယ်အတွင်းရှိအနီးနှင့်မယ်ဆိုင်ခရိုင်နှစ်ခုတွင်လုပ်ဆောင်မည် ဖြစ်သည်။ ပါဝင်သူများကို ၎င်းတို့၏နေထိုင်ရာ (သို့) ရပ်ရွာစု ဝေးရာ နေရာ များတွင်၊ အားလပ်ချိန်များ၌ ဖွဲ့စည်းတည်ဆောက်ထားသော မေးခွန်းလွှာများကို အသုံးပြု၍မျက်နှာချင်းဆိုင်တွေ့ဆုံမေးမြန်း ပါမည်။

၇။ သုတေသနလုပ်ငန်းစဉ်နှင့် ပါဝင်မှုကြာချိန်

၇.၁ ဖိတ်ခေါ်ခြင်း

ထိုင်းနိုင်ငံ၊ ချင်းလင်းပြည်နယ် မယ်ဆိုင်(Mae Sai) နှင့် မူအမ်(Mueang) ခရိုင်တို့တွင် နေထိုင် သော အသက် ၇ နှစ်မပြည့်သောကလေးငယ်များအားစောင့်ရှောက်သူ မြန်မာရွှေ့ပြောင်းနေထိုင်သူ (အသက်၁၅ နှစ်နှင့်အထက်) အားလုံးကို ဖိတ်ခေါ်ပါသည်။ ပါဝင်ခွင့်အလားအလာရှိသူများအား စစ်ဆေးခြင်းဖြင့်စတင်ပြီး ပါဝင်ကြောင်းသဘော

တူညီချက် လက်မှတ်ကိုရယူပါမည်။ အသက်(၁၈)နှစ်အောက် ပါဝင်သူများကို အရွယ်မရောက်သေးသူများအဖြစ် သတ်မှတ်ထား၍ ဤလေ့လာမှုတွင်မပါဝင်မီ မိဘ(သို့)တရားဝင် အုပ်ထိန်းသူ ထံမှ စာဖြင့်သဘောတူညီကြောင်း လက်မှတ် တောင်းခံပါမည်။

၇.၂ မေးခွန်းမေးမြန်းခြင်း

သင်သည်အင်တာဗျူးတွင်မေးခွန်းများကိုဖြေဆိုရမည်ဖြစ်ပြီးအချိန်အနည်းဆုံးမိနစ်၂၀မှ၃၀ခန့်ကြာပါမည်။

၇.၃ မေးခွန်းလွှာ

သင့်ကလေး၏ကာကွယ်ဆေးထိုးခြင်းအခြေအနေသင်၏ကာကွယ်ဆေးထိုးခြင်းဆိုင်ရာဗဟုသုတနှင့်

စိတ်နေသဘောထားများအခြားအကျိုးသက်ရောက်နိုင်သောအချက်များကိုသုံးသပ်ရန် ဖြစ်ပါသည်။

၈။ သုတေသနတွင်ပါဝင်ခြင်းကြောင့်ဖြစ်ပေါ်နိုင်သည့်အဆင်မပြေမှုများ

ဤသုတေသနတွင်ပါဝင်ခြင်းဖြင့် နေထိုင်မှုဆိုင်ရာအထောက်အထားကဲ့သို့သောထိရှလွယ်သည့်အကြောင်း အရာကိုဆွေး နွေးခြင်းမှာ စိတ်ပိုင်းဆိုင်ရာအဆင်မပြေဖြစ်နိုင်ပြီး အင်တာဗျူးအတွက်ထိုင်ပြီး မေးခွန်းများကို ဖြေဆို ခြင်းမှာလည်း သင်၏ကိုယ်ပိုင်အချိန်ကိုအနည်းငယ်ကုန်ဆုံးစေနိုင်ပါသည်။ လေ့လာမှုအတွင်း အဆင်မပြေမှုများ ကြုံတွေ့ပါက သုတေသီအားလွတ်လပ်စွာပြောဆိုရန် တိုက်တွန်းအပ်ပါသည်။ သင့်တွင် မည်သည့်အကျိုးဆက်မှမရှိဘဲ လေ့လာမှုမှအချိန်မရွေးနှုတ်ထွက်ခွင့်ရှိပြီး နုတ်ထွက်ရန် သင့်ဆုံးဖြတ်ချက်သည် အခြား လုပ်ဆောင်မှုများတွင် သင့်ပါဝင်ပတ်သက်မှုကို ထိခိုက်စေမည်မဟုတ်ပါ။

၉။ သုတေသနတွင် ပါဝင်ခြင်းမှ ရရှိနိုင်သည့် အကျိုးကျေးဇူးများ

ဤသုတေသနတွင်ပါဝင်ခြင်းကြောင့် တိုက်ရိုက်အကျိုးကျေးဇူးကိုမရရှိနိုင်သော်ငြား သုတေသနရလဒ် များ သည် အခြားပါဝင်သူများနှင့်လူ့အဖွဲ့အစည်းအတွက်အကျိုးရှိနိုင်ပါသည်။ ပါဝင်ခြင်းဖြင့်သင့်ကလေး၏ ကာကွယ်ဆေး ထိုးခြင်းဆိုင်ရာအခြေအနေကို ပိုမိုသိရှိနိုင်ပြီး၊ ကာကွယ်ဆေးများနှင့် ဆေးထိုးဝန်ဆောင်မှုများအကြောင်း ပိုမို ကောင်းမွန်စွာနားလည်နိုင်မည်ဖြစ်သည်။ ထို့အပြင်၊ သုတေသန တွေ့ရှိချက်များသည် အထူးသဖြင့် မြန်မာရွှေပြောင်း နေထိုင်သူများအတွင်း ကာကွယ်ဆေးထိုးခြင်းဆိုင်ရာ အတားအဆီးများကို ပိုမိုနားလည်သဘောပေါက်လာစေခြင်းဖြင့် သင့်လူ့အဖွဲ့အစည်းကို အကျိုးပြု နိုင်မည်ဖြစ်သည်။ ဤအသိပညာသည် ရွှေပြောင်းအခြေချသူကလေးငယ်များအတွက် ပိုမိုဖော်ရွေသော ကာကွယ်ဆေးထိုးခြင်း ဝန်ဆောင်မှုများကိုမြှင့်တင်ရန်နှင့် ပိုမိုကောင်းမွန်သောမူဝါဒများ (သို့) အစီအစဉ် များဖြစ်ပေါ်လာစေရန် ကူညီပေးနိုင်ပါသည်။

၁၀။ သုတေသနတွင် မပါဝင်ရန် ရွေးချယ်မည်ဆိုလျှင် အခြားရွေးချယ်မှုများ

ဤလေ့လာမှုတွင်ပါဝင်ခြင်းသည် လုံးဝဆန္ဒအလျောက်ဖြစ်သည်။ မပါဝင်ရန် ရွေးချယ်ပါက ပြစ်ဒဏ် (သို့) အခြားခံစားခွင့်များ ဆုံးရှုံးမည်မဟုတ်ပါ။ သင့်တွင် ပုံမှန်အတိုင်း ကျန်းမာရေးစောင့်ရှောက်မှုများ၊ ကျန်းမာရေး စေတနာ့ဝန်ထမ်းများနှင့် ရပ်ရွာအဖွဲ့အစည်းများထံမှ ကျန်းမာရေးဝန်ဆောင်မှုများနှင့် လူမှုရေးဆိုင်ရာ ပံ့ပိုးကူညီမှုများကို အပြည့်အဝရရှိမည်ဖြစ်သည်။

၁၁။ သုတေသနအတွင်း ဖြစ်ပေါ်နိုင်သောအခြေအနေများကို ကိုင်တွယ်စီမံရန် လမ်းညွှန်ချက်များ

အခြေအနေများ	လမ်းညွှန်ချက်များ
▪ သုတေသနကာလအတွင်းတွင် ထွက်ခွာရန် ဆုံးဖြတ်လိုပါက	သုတေသနမှ မည်သည့်အချိန်မဆို ထွက်ခွာလိုသည်ဟု ဆုံးဖြတ်ပါက၊ မည်သည့်အပြစ်၊ သက်တမ်း ကန့်သတ်မှု (သို့) အနုတ်သက်ရောက်မှုမရှိဘဲ ထွက်ခွာ နိုင်ပါသည်။ ထွက်ခွာလိုသည်ကို သုတေသနပြုလုပ်သူ ထံသိပေးပါက၊ ပါဝင်မှုကို ချက်ချင်း ရပ်စဲပေးပါမည်။

▪ သုတေသန သို့မဟုတ် သင်၏ လုံခြုံရေးနှင့် သက်ဆိုင်သော သတင်းအချက်အလက်အသစ်များ ရရှိပါက	သုတေသနအပေါ် သက်ရောက်မှုရှိနိုင်သော သတင်းအချက်အလက်အသစ်များ ရရှိလာပါက၊ သုတေသန ပြုသူက ချက်ချင်းအသိပေးပါမည်။ ထိုသတင်း အချက်အလက်အပေါ် မူတည်၍ သုတေသနတွင်ဆက်လက် ပါဝင်မည်၊ မပါဝင်မည်ကို ပါဝင်သူက ဆုံးဖြတ်နိုင်သည်။
▪ ပါဝင်မှုရပ်စဲရန်သတ်မှတ်ချက်များ သုတေသနစီမံကိန်းအတိုင်းပြီးမြောက်မှု၊ ကြိုတင်သတ်မှတ်ထားသော အချိန် ကန့်သတ်ချက်သို့ရောက်ရှိမှု (သို့) ရည်မှန်းထားသည့် နမူနာအရွယ်အစား ပြည့်မီမှုများ ပါဝင်ပါသည်။	အထက်ဖော်ပြပါ စည်းမျဉ်းများမှ မည်သည့်အချက်မဆို ပြည့်မီပါက သုတေသနပြုသူသည် ပါဝင်သူများအား အကြောင်းကြားပြီး သုတေသန ကို အဆုံးသတ်ပါမည်။ အဆိုပါ အချိန်အထိ စုဆောင်းထားသော ဒေတာများကို လုံခြုံစွာ သိမ်းဆည်းထားပြီး သုတေသန၏ တစ်စိတ် တစ်ပိုင်းအဖြစ် ခွဲခြမ်းစိတ်ဖြာသုံးစွဲသွားမည်ဖြစ်သည်။

၁၂။ သုတေသနပြီးဆုံးပြီးနောက် ရရှိနိုင်သည့် အကျိုးအမြတ်များ

သုတေသနလုပ်ငန်းပြီးဆုံးသည့်အခါတွင် တွေ့ရှိချက်များသည် ထိုင်းနိုင်ငံ၊ ချင်းလင်းပြည်နယ်ရှိ မြန်မာ ရွှေ့ပြောင်းကလေးငယ်များကြားတွင် ကလေးကာကွယ်ဆေးထိုးခြင်းအခြေအနေနှင့် အတားအဆီးများကိုပိုမို နားလည် စေမည်ဖြစ်ပြီး ကျန်းမာရေးအာဏာပိုင်များ၊ ရပ်ရွာကျန်းမာရေး လုပ်သားများနှင့် NGO များမှ ရွှေ့ပြောင်းနေထိုင် သူတို့အတွက် ပိုမိုထိရောက်သော ကာကွယ်ဆေးထိုးနှံပေးရေးအစီအစဉ်များကို ဒီဇိုင်းရေးဆွဲရန်အသုံးပြုနိုင်မည်။ ထို့ အပြင်၊ အလားတူနယ်စပ် (သို့) ရွှေ့ပြောင်းနေထိုင်သည့်နေရာများတွင် လုပ်ကိုင်နေသော ပြည်သူ့ကျန်းမာရေး အသိုင်းအဝိုင်းများအတွက် တန်ဖိုးရှိမည်ဖြစ် သည်။

၁၃။ သုတေသန အချက်အလက်လျှို့ဝှက်မှုနှင့် အကန့်အသတ်များ

ပါဝင်သူတိုင်း၏အချက်အလက်များကိုလုံးဝလျှို့ဝှက်စွာထိန်းသိမ်းထားမည်ဖြစ်ပြီးသုတေသနပြီးဆုံးပြီးနောက်၌စွန့်အပ်ပေးရန်အချက်အလက်များကိုလုံခြုံစွာသိမ်းဆည်းထားပြီးခွဲခြမ်းစိတ်ဖြာမှု၊ထုတ်ပြန်ခြင်းနှင့်လိုအပ်ပါကအတည်ပြုရန်အသုံးပြုမည်ဖြစ်သည်။ဤကာလကုန်ဆုံးပြီးနောက်တွင်စက္ကူနှင့်ဒေတာအချက်အလက်များအားလုံးကိုဖျက်ပစ်မည်ဖြစ်သည်။သုတေသနတွင်ပါဝင်သူ၏ကိုယ်ရေးအချက်အလက်များကိုသက်ဆိုင်သူများသာ(သုတေသနအသင်းအဖွဲ့၊ကြီးကြပ်ရေးအဖွဲ့၊ကြည့်ရှုခွင့်ရှိမည်ဖြစ်ပြီးမည်သည့်ပြင်ပသူမျှမကြည့်ရှုနိုင်အောင်ကာကွယ်ထားပါမည်။သို့သော်သုတေသန၏တိကျမှုနှင့်တရားဝင်မှုများကိုအတည်ပြုရန်အတွက်စိစစ်ကြည့်ရှုရသောအဖွဲ့များ(သက်ဆိုင်ရာအကျင့်စာရိတ္တစိစစ်ကော်မတီ၊သုတေသနကြီးကြပ်ရေးမှူးများ၊ပူးပေါင်းအဖွဲ့ဝင်များ(သို့)အစိုးရအဖွဲ့အစည်းများမှခွင့်ပြုထားသော သုံးသပ်သူများ)ကသင်၏ကိုယ်ရေးအချက်အလက်များကိုဝင်ရောက်ကြည့်ရှုရန်လိုအပ်နိုင်သည်။ထိုသို့ကြည့်ရှုခြင်းမှာ သုတေသနကျင့်ဝတ်နှင့်လုပ်ငန်းစဉ်များအပေါ်ယုံကြည်စိတ်ချမှုရရှိစေရန်သာဖြစ်သည်။ထိုသို့ သက်ဆိုင်ရာ ကျင့်ဝတ် စည်းမျဉ်းများကိုလေးစားလိုက်နာခြင်းအားဖြင့်သုတေသနတွင်ပါဝင်သူအနေဖြင့်ရရှိသောအခွင့်အရေးများကိုကာ ကွယ်နိုင်ပြီးချင်းလင်းပြည်နယ်မှမြန်မာနိုင်ငံသားရွှေ့ပြောင်းနေထိုင်သူမိသားစုများအတွက်ကျန်းမာရေးကောင်းမွန်တိုး တက်စေမည့်သုတေသနရလဒ်များကို ထောက်ပံ့နိုင်ရန် ရည်ရွယ်ပါသည်။

၁၄။ သုတေသနတွင် ပါဝင်မှုအတွက် အကျိုးခံစားခွင့်

ပါဝင်သူများသည်ကျေးဇူးလက်ဆောင်အဖြစ် ကာကွယ်ဆေးလက်ကမ်းစာစောင်ကို လက်ခံရရှိမည် ဖြစ်သည်။ ဤစာစောင်တွင် ချင်းလင်းနှင့်မယ်ဆိုင် အနီးနားရှိ ကာကွယ်ဆေးထိုးဝန်ဆောင်မှုများအကြောင်း၊ ကာကွယ်ဆေးထိုး

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ခြင်း၏အရေးပါမှု၊ ဖြစ်နိုင်ချေရှိသော ကာကွယ်ဆေးဘေးထွက်ဆိုးကျိုးများနှင့် ၎င်းတို့ကိုသင့်လျော်စွာ စီမံခန့်ခွဲခြင်းအစရှိသည့် အသေးစိတ်အချက်အလက်များကို မျှဝေပေးသွားမည်ဖြစ်ပါသည်။

၁၅။ ပါဝင်သူမှ ပေးဆောင်ရမည့်ကုန်ကျစရိတ်များ

ဤသုတေသနတွင် ပါဝင်သူများမှ ပေးဆောင်ရမည့်ကုန်ကျစရိတ်မရှိပါ။

၁၆။ သုတေသနတွင်ပါဝင်ခြင်းကြောင့် ထိခိုက်မှု သို့မဟုတ် မတော်တဆဖြစ်ရပ်များ ဖြစ်ပေါ် လာ ပါကပြုစုခြင်းအတွက်လမ်းညွှန်ချက်များ

ဤလေ့လာမှုတွင် ဆေးဘက်ဆိုင်ရာ ကုသမှု သို့မဟုတ် လုပ်ထုံးလုပ်နည်းများ မပါဝင်ပါ။ ထို့ကြောင့် ရုပ်ပိုင်းဆိုင်ရာထိခိုက်မှု မရှိဟုမျှော်လင့်ပါသည်။ သို့သော်လည်း ပါဝင်သူများသည် အင်တာဗျူးကာလ အတွင်း စိတ်အဆင်မပြေမှုနှင့်ကြုံတွေ့ရပါက (ဥပမာ၊ နေထိုင်မှုအထောက်အထား ကဲ့သို့သော အကြောင်း အရာများကြောင့်) ၎င်းတို့အားမည်သည့်အကျိုးဆက်မှ မရှိဘဲ မေးခွန်းများကို ကျော်ရန် (သို့) ရပ်နားခွင့် ပြုမည်ဖြစ်သည်။ သုတေသီသည် ပါဝင်သူများအား လေးစားမှု၊စာနာမှုနှင့်ဆက်ဆံမည်ဖြစ်ပြီး အထောက် အကူဖြစ်စေမည့် ပတ်ဝန်းကျင်တစ်ခုအား ဖန်တီးပေးမည်ဖြစ်သည်။ လေ့လာမှုတွင် ပါဝင်ခြင်း၏ တိုက်ရိုက် ရလဒ်ကြောင့် ထိခိုက်မှုတစ်စုံတစ်ရာ ဖြစ်ပေါ်လာပါက၊ အဓိက စုံစမ်းစစ်ဆေးသူသည် အဆိုပါဖြစ်ရပ်အား ကျင့်ဝတ်ကော်မတီထံ အစီရင်ခံမည်ဖြစ်ပြီး အဖွဲ့အစည်းဆိုင်ရာ လမ်းညွှန်ချက်များနှင့်အညီ သင့်လျော်သော ဖြေရှင်းမှုများကို လုပ်ဆောင်မည်ဖြစ်သည်။

၁၇။ မေးခွန်းများ သို့မဟုတ် စိုးရိမ်မှုများရှိပါက ဆက်သွယ်ရန်

သုတေသနနှင့်ပတ်သက်သော သို့မဟုတ် သုတေသနအတွင်း လုံခြုံမှုနှင့် ပတ်သက်၍ မေးခွန်းများ သို့မဟုတ် စိုးရိမ်မှုများရှိပါက၊ သုတေသနသူအား တိုက်ရိုက်မေးမြန်းနိုင်ပါသည်။

ဦးဆောင်သုတေသနပြုသူ

အမည် - မရှင်မိုးဦး၊ ဖုန်းနံပါတ် - ၀၉ ၅၇၇၄၉၅၅၃၊ အီးမေးလ် - 6751804004@lamduan.mfu.ac.th

အကြံပေးသူ

အမည် - Dr. Pamornsri Inchon

ဖုန်းနံပါတ် - ၀၅၃၉၁၆၃၀၄

အီးမေးလ် - pamornsri.sri@mfu.ac.th

သင်၏အခွင့်အရေးများနှင့်ပတ်သက်၍မေးမြန်းလိုပါက၊ မယ်ဖာလွမ်တက္ကသိုလ် လူ့အဖွဲ့အစည်း သုတေသန အကဲဖြတ်ကော်မတီ ထံသို့ ဆက်သွယ်နိုင်ပါသည်။ တည်နေရာမှာ သုတေသနနှင့် ပညာပေး ဝန်ဆောင်မှုဌာန ၄ ထပ်တွင် တည်ရှိပါသည်။

ဖုန်း - ၀၅၃ ၉၁၇ ၁၇၀ မှ ၁/ ၀၅၃ ၉၁၆ ၅၅၁/၀၅၃ ၉၁၇ ၁၇၀၊ အီးမေးလ် - rec.human@mfu.ac.th

သင်၏အခွင့်အရေးများ၊ လုံခြုံမှုနှင့် ကောင်းမွန်မှုများကို လူ့အဖွဲ့အစည်း သုတေသနအပြင် အဆင် များနှင့်အညီ ကာကွယ်ပေးနိုင်ရန် ဆက်သွယ်မေးမြန်းနိုင်ပါသည်။

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သတင်းအချက်အလက်နှင့်သဘောတူကြောင်းလက်မှတ်ပေးခြင်းပုံစံ

ကျွန်ုပ်၊ _____၊ သည် "ထိုင်းနိုင်ငံ၊ ချင်းလိုင်ပြည်နယ်တွင်
နေထိုင်သော မြန်မာရွှေ့ပြောင်းကလေးငယ်များ၏ကာကွယ်ဆေးထိုးခြင်းအခြေအနေနှင့် ၎င်း၏ဆက်စပ် အချက်များ"
ဟုခေါ်သောသုတေသနစီမံကိန်းတွင်ပါဝင်ရန် ဆုံးဖြတ်ခဲ့ပါသည်။ ဤသုတေသနအကြောင်း
အချက်အလက်နှင့်အတည်ပြုချက်များကို ကျွန်ုပ်ရရှိခဲ့ပြီး၊ မေးခွန်းများကိုမေးမြန်း၍ စိတ်ကျေနပ် သော
အဖြေများကိုရရှိခဲ့ပါသည်။ ကျွန်ုပ်သည်စာရွက်စာတမ်းများပေါ်တွင်ဖော်ပြထားသော အချက်အလက်များကို ကောင်းစွာ
နားလည်ဖို့ လုံလောက်စွာ ဖတ်ရှု၍ နားလည်ပြီး ဤသုတေသနတွင် ပါဝင်ရန် ဆုံးဖြတ်ခဲ့ပါသည်။
ကျွန်ုပ်သည်ဤသုတေသနတွင် ပါဝင်ရန်ဆုံးဖြတ်ခြင်းမရှိပါက မည်သည့်အကျိုးသက်ရောက်မှုမှမရှိဘဲ၊ မည်
သည့်အခွင့်အရေးကိုမူချိုးဖောက်ခြင်းမရှိဘဲ သုတေသနမှလွတ်လပ်စွာထွက်ခွာနိုင်ပါသည်။ ဤစာတမ်းကို
လက်မှတ်ထိုးပေးခြင်းအားဖြင့် ကျွန်ုပ်သည်ဥပဒေနှင့်အညီရရှိသည့်အခွင့်အရေးများကို လက်မလွှတ်ဘဲ၊
လက်မှတ်ထိုးပေးပြီးနောက်တွင် အချက်အလက်စာရွက်နှင့် သဘောတူကြောင်းစာတမ်း မိတ္တူရရှိပါမည်။

ပါဝင်သူ၏လက်မှတ် _____ ရက်စွဲ _____
(_____)

တောင်းခံသူ၏လက်မှတ် _____ ရက်စွဲ _____
(_____)

နားကြားပြီးနားလည်နိုင်သော်လည်း စာမတတ်သူများအတွက်

ကျွန်ုပ်မဖတ်နိုင်ပေမယ့် သုတေသီက ဒီအချက်အလက်စာရွက်ကိုဖတ်ပြီး ကျွန်ုပ်ဆီအသိပေးသော
သဘောတူညီချက်ပုံစံကို ကောင်းကောင်းနားလည်ပါသည်။ ထို့ကြောင့် ကျွန်ုပ်၏လက်မှတ်ကို ကျွန်ုပ်၏
ဆန္ဒအလျောက်လက်မှတ်ထိုး (သို့) နေရာချပါသည်။

ပါဝင်သူ၏ လက်မှတ်/ လက်ဗွဲ _____ ရက်စွဲ _____
(_____)

သဘောတူညီချက်လက်မှတ်တောင်းခံသူ၏လက်မှတ် _____ ရက်စွဲ _____
(_____)

Version 3 Date 10/10/2025

AP 03_1/2024

သုတေသနတွင် ပါဝင်ပက်သက်သူမဟုတ်သော သက်သေတောင်းခံသက်သေခံချက်
(ပါဝင်သူသည်မဖတ်နိုင်သော်လည်း နားထောင်ခြင်းဖြင့်နားလည်နိုင်လျှင်)

သဘောတူညီချက်တောင်းဆိုမှုလုပ်ငန်းစဉ်အတွင်း ကျွန်ုပ်တို့နေခဲ့ပြီး သဘောတူညီချက်တောင်းခံသူသည် အချက်အလက်စာရွက်ကိုဖတ်/ရှင်းပြခဲ့ကြောင်းကိုအတည်ပြုကြောင်း _____။
 အထက်ဖော်ပြပါ ပုဂ္ဂိုလ်သည် မေးခွန်းများမေးခွင့်ရရှိခဲ့ပြီး ဤစာတမ်းပါအချက်အလက်များကိုနားလည်ပြီး နောက် စိတ်ဆန္ဒအလျောက်ပါဝင်ရန်ဆုံးဖြတ်ခဲ့သည်။

သက်သေခံလက်မှတ် _____ ရက်စွဲ _____
 (_____)

အသက် (၁၈) အောက်ပါဝင်သူများအတွက် မိဘ/ဥပဒေအရတာဝန်ရှိသူ၏ သဘောတူညီချက်စောင်

(အသက် (၁၈) နှစ်အောက် ပါဝင်သူများအတွက် အထူးအကာအကွယ်ပေးရန်)

ကျွန်ုပ်တို့သည် ဤသုတေသနတွင် ပါဝင်သူ၏ _____ အနေဖြင့်၊ သုတေသနတွင်ပါဝင်သူ နှင့်အတူ အထက်ပါသုတေသနအကြောင်းအရာများကို ဖတ်ပြီးအရာအားလုံးကို ကောင်းစွာနားလည်ခဲ့ပါ သည်။ သို့ဖြစ်ပါ၍ ကျွန်ုပ်တို့သည် မောင်/ မ _____ အား ဤသုတေသနတွင် ဆန္ဒအလျောက် ပါဝင်ရန်အတွက် ဤသဘောတူညီချက်စာတမ်းကို လက်မှတ်ရေးထိုးခဲ့သည်။

မိဘ/ဥပဒေအရတာဝန်ရှိသူအမည်: _____

လက်မှတ်: _____

နေ့စွဲ: _____

APPENDIX E

VALIDITY ASSESSMENT OF QUESTIONNAIRE

The validity of the questionnaire was assessed by three experts who provided evaluation scores using the Item-Objective Congruence (IOC) method. The questionnaire was categorized into six parts, sociodemographic characteristics, assessment of child's immunization status, knowledge questions, attitude questions, social support questions, and healthcare system related questions.

Expert 1

Name: Dr. Siriaporn Khunthason

Designation: Lecturer

Institution: School of Health Sciences, Public Health, Mae Fah Luang University

Email: siriaporn.khu@mfu.ac.th

Expert 2

Name: Dr. Amornrat Anuwatnonthakate

Designation: Lecturer

Institution: School of Health Sciences, Public Health, Mae Fah Luang University

Email: a.amornratp@gmail.com

Expert 3

Name: Dr. Myat Yadana Kyaw

Designation: PhD Candidate

Institution: Global Health Research Department, Juntendo University, Tokyo

Email: myk.yadana@gmail.com

1.Questionnaire Regarding Sociodemographic Characteristics

Item	Expert 1			Expert 2			Expert 3			Total score	IOC	Result
	-1	0	+1	-1	0	+1	-1	0	+1			
1			✓			✓			✓	3/3=1	1	Good
2			✓			✓			✓	3/3=1	1	Good
3			✓			✓			✓	3/3=1	1	Good
4			✓			✓			✓	3/3=1	1	Good
5			✓			✓			✓	3/3=1	1	Good
6			✓			✓			✓	3/3=1	1	Good
7			✓			✓			✓	3/3=1	1	Good
8			✓			✓			✓	3/3=1	1	Good
9			✓			✓			✓	3/3=1	1	Good
10			✓			✓			✓	3/3=1	1	Good
11			✓			✓			✓	3/3=1	1	Good
12			✓			✓			✓	3/3=1	1	Good
13			✓			✓			✓	3/3=1	1	Good
14			✓			✓			✓	3/3=1	1	Good
15			✓			✓			✓	3/3=1	1	Good
16			✓			✓			✓	3/3=1	1	Good
17			✓			✓			✓	3/3=1	1	Good
18			✓			✓			✓	3/3=1	1	Good

Overall IOC = 1+1+1+1+1+1+1+1+1+1+1+1+1+1+1+1+1+1 = 18

= 18/18 = 1: Good

2. Questionnaire Regarding Child's Immunization Status

Item	Expert 1			Expert 2			Expert 3			Total score	IOC	Result
	-1	0	+1	-1	0	+1	-1	0	+1			
1			✓			✓			✓	3/3=1	1	Good
2			✓			✓			✓	3/3=1	1	Good
3			✓			✓			✓	3/3=1	1	Good

Overall IOC = 1+1+1 = 3

= 3/3 = 1: Good

3. Questionnaire Regarding Knowledge of Immunization

Item	Expert 1			Expert 2			Expert 3			Total score	IOC	Result
	-1	0	+1	-1	0	+1	-1	0	+1			
K-1			✓			✓			✓	3/3=1	1	Good
K-2			✓			✓			✓	3/3=1	1	Good
K-3			✓			✓			✓	3/3=1	1	Good
K-4			✓			✓			✓	3/3=1	1	Good
K-5			✓			✓			✓	3/3=1	1	Good
K-6			✓			✓			✓	3/3=1	1	Good
K-7			✓			✓			✓	3/3=1	1	Good
K-8			✓			✓			✓	3/3=1	1	Good
K-9			✓			✓			✓	3/3=1	1	Good
K-10			✓			✓			✓	3/3=1	1	Good
K-11			✓			✓			✓	3/3=1	1	Good
K-12			✓			✓			✓	3/3=1	1	Good
K-13			✓			✓			✓	3/3=1	1	Good

Overall IOC = 1+1+1+1+1+1+1+1+1+1+1+1+1= 13

= 13/13 = 1: Good

4. Questionnaire Regarding Attitude on Immunization

Item	Expert 1			Expert 2			Expert 3			Total score	IOC	Result
	-1	0	+1	-1	0	+1	-1	0	+1			
A-1			✓			✓			✓	3/3=1	1	Good
A-2			✓			✓			✓	3/3=1	1	Good
A-3			✓			✓			✓	3/3=1	1	Good
A-4			✓			✓			✓	3/3=1	1	Good
A-5			✓			✓			✓	3/3=1	1	Good
A-6			✓			✓			✓	3/3=1	1	Good
A-7			✓			✓			✓	3/3=1	1	Good
A-8			✓			✓			✓	3/3=1	1	Good
A-9			✓			✓			✓	3/3=1	1	Good
A-10			✓			✓			✓	3/3=1	1	Good
A-11			✓			✓			✓	3/3=1	1	Good

Overall = 1+1+1+1+1+1+1+1+1+1+1 = 11

= 11/11 = 1: Good

5. Questionnaire Regarding Social/ Interpersonal Drivers

Item	Expert 1			Expert 2			Expert 3			Total score	IOC	Result
	-1	0	+1	-1	0	+1	-1	0	+1			
1			✓			✓			✓	3/3=1	1	Good
2			✓			✓			✓	3/3=1	1	Good
3			✓			✓			✓	3/3=1	1	Good
4			✓			✓			✓	3/3=1	1	Good
5			✓			✓			✓	3/3=1	1	Good
6			✓			✓			✓	3/3=1	1	Good
7			✓			✓			✓	3/3=1	1	Good
8			✓			✓			✓	3/3=1	1	Good

9	✓	✓	✓	3/3=1	1	Good
---	---	---	---	-------	---	------

Overall IOC = 1+1+1+1+1+1+1+1+1 = 9

= 9/9 = 1: Good

6. Questionnaire Regarding Health system/ Institutional Drivers

Item	Expert 1			Expert 2			Expert 3			Total score	IOC	Result
	-1	0	+1	-1	0	+1	-1	0	+1			
1			✓			✓			✓	3/3=1	1	Good
2			✓			✓			✓	3/3=1	1	Good
3			✓			✓			✓	3/3=1	1	Good
4			✓			✓			✓	3/3=1	1	Good
5			✓			✓			✓	3/3=1	1	Good
6			✓			✓			✓	3/3=1	1	Good
7			✓			✓			✓	3/3=1	1	Good
8			✓			✓			✓	3/3=1	1	Good
9			✓			✓			✓	3/3=1	1	Good
10			✓			✓			✓	3/3=1	1	Good
11			✓			✓			✓	3/3=1	1	Good
12			✓			✓			✓	3/3=1	1	Good
13			✓			✓			✓	3/3=1	1	Good
14			✓			✓			✓	3/3=1	1	Good
15			✓			✓			✓	3/3=1	1	Good

Overall = 1+1+1+1+1+1+1+1+1+1+1+1+1+1+1 = 15

= 15/15 = 1: Good

APPENDIX F

QUESTIONNAIRE (ENGLISH VERSION)

Version 1 Date 27/5/2025

**APPENDIX A
QUESTIONNAIRE**

The survey is to be completed by parents or caregivers of children under age 7 years.

Date

Research code

District name.....

Date

The questionnaire consists of 7 parts as follows.

Part 1: Socio-demographic Characteristics questionnaire

Part 2: Assessment of child immunization status

Part 3: Assessment of knowledge of caregiver

Part 4: Assessment of attitude of caregiver

Part 5: Assessment of social or interpersonal drivers of immunization

Part 6: Assessment of systemic or institutional drivers of immunization

Part 1: Socio-demographic Characteristics Questionnaires

Please read the following questions carefully and choose the most appropriate answers in your opinion.

For child

1. Age of child: ____ Years ____ Months

2. Sex of child
☐ Boy ☐ Girl

3. Educational status of the child
☐ Not schooling yet ☐ Preschool/ kindergarten ☐ Primary school

4. Place of birth (for child)

4.1 Country
☐ Thailand ☐ Myanmar

4.2 Setting
☐ Home-based ☐ Health facility-based

5. If your child was born in Thailand, is he/she officially registered at the local civil registration office (District Office or Amphoe)?
☐ Yes ☐ No ☐ Don't know

6. What kind of health insurance does your child have?
☐ Don't have ☐ Migrant health insurance scheme

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THE MAE FAH LUANG UNIVERSITY
ETHICS COMMITTEE ON HUMAN RESEARCH

19 OCT 2025

APPROVED

Version 1 Date 27/5/2025

☐ Migrant fund (M-fund) ☐ Others (please specify):

7. Did the mother receive antenatal care during pregnancy of this child?

☐ Yes ☐ No ☐ Don't know/ not remember

8. If yes, how many times did mother receive antenatal care during that pregnancy?

☐ 1-3 times ☐ more than 4 times ☐ Don't know/ not remember

For caregivers

9. Relationship to the child

☐ Mother ☐ Father ☐ Grandparents ☐ Uncle or aunt ☐ Brother or sister
☐ Other (please specify):

10. Sex

☐ Man ☐ Woman

11. Ethnicity

☐ Bamar ☐ Karen ☐ Shan ☐ Mon ☐ Others.....

12. What is your religion?

☐ Buddhist ☐ Christian ☐ Islam ☐ Others.....

13. Highest educational attainment of caregiver:

☐ No formal education ☐ Primary school ☐ Middle school ☐ High school
☐ More than high school

14. Occupation:

☐ Unemployed ☐ Agriculture and livestock ☐ Trader ☐ Service provider
☐ Construction worker ☐ Others (please specify):

15. How long have you been in this community?

_____ Years _____ Months

16. Family income per month: _____ Baht

17. Total number of children: _____ children

18. In what permission status are you staying in Thailand?

☐ Documented ☐ Undocumented

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Part 2: Assessment of child immunization status

1. Do you have vaccination card with appointment?

- ☐ Yes (Record immunization date from vaccination card)
- ☐ No/ Don't know/ Lost/ No response

No.	Vaccines	Immunization Date/ month/ year
1.	BCG within 7 days	
2.	HB1 within 7 days	
3.	DTP-HB-Hib 1	
4.	DTP-HB-Hib 2	
5.	DTP-HB-Hib 3	
6.	IPV 1	
7.	IPV 2	
8.	OPV 3	
9.	OPV 4	
10.	OPV 5	
11.	Rota 1	
12.	Rota 2	
13.	Rota 3	
14.	MMR 1	
15.	MMR 2	
16.	DTP 4	
17.	DTP 5	
18.	LJAE 1	
19.	LJAE 2	

2. Immunization status

- ☐ Fully ☐ Partially ☐ non-immunized

3. If incomplete, why was the child not completely immunized? (multiple answers)

- ☐ I move from place to place often, which makes it hard to complete vaccines.
- ☐ I often forget dates of vaccination appointments for my child.
- ☐ I worry about vaccine side effects, such as fever, for my child
- ☐ I do not have enough time to take the child for vaccination because of work.
- ☐ Others (please specify):

Part 3: Knowledge for immunization questionnaires

This questionnaire is designed to assess your knowledge about childhood immunization. Please read each question carefully and answer your honest responses. Put a true mark in only one place.

No.	Statements	Yes	No	Don't know/ no response
-----	------------	-----	----	----------------------------

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1.	Children needs to start immunization as early as possible as they have high risk of infection and serious case of disease.			
2.	The child must be started immunization at the age of 9 months.			
3.	Hepatitis B vaccine can prevent your child from Hepatitis B viral infection.			
4.	Whooping cough is a disease of the respiratory tract.			
5.	Measles is a highly infectious disease.			
6.	The child should get at least 3 doses of polio vaccine before the age of 1 year.			
7.	Receiving multiple immunization in one day can make your child body stressed.			
8.	The first dose of Measles/MMR vaccine must be given at the age of 9 months.			
9.	Vaccine for TB (BCG) and the first dose of Hepatitis B (HBV) should be given at birth.			
10.	Mild fever is a common side effect after receiving immunization.			
11.	Diarrhea is a side effect of the routine immunization schedule.			
12.	Soreness at the site of injection after vaccination is a life-threatening side effect.			
13.	Vaccination can be given when a child has a high fever.			

Part 4: Assessment of attitude on immunization

This assessment asks you how you think, assume, or believe about childhood immunization. Your responses will help us understand caregivers' perspectives on the importance, safety, and effectiveness of vaccines. Please read each statement carefully and respond honestly based on your personal beliefs and experiences. Please choose only one that appears most appropriate.

No.	Statements	Strongly agree	Agree	Not sure	Disagree	Strongly disagree
1.	It is better for my child to get fewer vaccines at the same time.					
2.	Children get more shots than are good for them.					

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3.	I believe that many of the illnesses that shots prevent are severe.					
4.	It is better for my child to develop immunity by getting sick than to get a shot.					
5.	I trust the information I receive about shots.					
6.	I am able to openly discuss my concerns about shots with my child's doctor.					

No.	Statement	Yes	No	Don't know/ no response
7.	If you had another infant today, would you want him/ her to get all the recommended shots?			

No.	Statements	Not at all concerned	Not too concerned	Not sure	Somewhat concerned	Very concerned
8.	How concerned are you that your child might have a serious side effect from a shot?					
9.	How concerned are you that a shot might not prevent the disease?					
No.	Statements	Not at all hesitant	Not too hesitant	Not sure	Somewhat hesitant	Very hesitant
10.	Overall, how hesitant about childhood shots would you consider yourself to be?					

11. On a scale of 1 to 10, how sure are you that following the recommended shot schedule is a good idea for your child?

Not sure at all

Completely sure

0 1 2 3 4 5 6 7 8 9 10

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Part 5: Assessment of social or interpersonal drivers for immunization

1. Do you think most of the parents you know get their children vaccinated?
☐ Yes ☐ No ☐ Don't know
2. Do you think most of your close family and friends want you to get your child immunized?
☐ Yes ☐ No ☐ Don't know
3. Do you think most of your community leaders want you to get your child immunized e.g., village headman, migrant community leader?
☐ Yes ☐ No ☐ Don't know
4. Do you think your religious leaders want you to get your child vaccinated?
☐ Yes ☐ No ☐ Don't know
5. Has a health care worker recommended your child be vaccinated?
☐ Yes ☐ No ☐ Don't know
6. How do you receive information about child immunization? (multiple answers)
☐ From family members or friends ☐ From community meetings
☐ From healthcare providers ☐ From school or daycare centers
☐ From social media ☐ Others (please specify):
7. Do migrant or community health volunteers help you in immunization of your child?
☐ Yes ☐ No ☐ Don't know
8. Have your Thai friends (e.g., employers, landlords, etc.) encouraged you to vaccinate your child?
☐ Yes ☐ No ☐ Don't know
9. If it is time for your children to get vaccinated, would you need permission to take your child to clinic?
☐ Yes ☐ No ☐ Don't know

Part 6: Assessment of health system influence or institutional drivers of immunization

1. Do you know where to go and get your child immunized?
☐ Yes ☐ No
2. Approximately distance to health facility for immunization.
..... km
☐ <1 km ☐ 1-5 km ☐ >5km
3. How much time did you spend for the immunization session in general?
..... mins or hours
☐ <1 hour ☐ 1-2 hours ☐ >2 hours

Version 1 Date 27/5/2025

4. How much does it usually cost for one immunization visit for your child? When you think about the cost, please consider any payments to the clinic, the cost of getting there, plus the cost of taking time away from work.

..... baht/ visit

5. How easy is it to get immunization services for your child? (choose only one)

☐ Not at all easy ☐ A little easy ☐ Moderately easy ☐ Very easy

6. How easy is it to pay for vaccination? (only one answer)

☐ Not easy at all ☐ A little easy ☐ Moderately easy ☐ Very easy

7. What makes it difficult to get immunization services for your child? (multiple answers)

- ☐ Nothing (skip the rest)
☐ Getting to the clinic is hard
☐ Financial difficulty
☐ Time constraints
☐ Waiting time in clinic too long
☐ My documentation status creates difficulties
☐ Other challenges you face in getting your child vaccinated (please describe):

Provider practice

8. Have you ever been contacted (e.g., by phone, text message, home visit) about your child being due for vaccination?

☐ Yes ☐ No

9. Are there any language barriers when communicating with healthcare providers during immunization appointments?

☐ Yes ☐ No

10. Is there any interpreter service available during immunization?

☐ Yes ☐ No ☐ Don't know

11. Was your child's body temperature screening conducted before immunization?

☐ Yes ☐ No ☐ Don't know

12. During your child's last immunization appointment, was there any health message about immunization provided?

☐ Yes ☐ No ☐ Don't know

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13. If yes, what is the information about? (multiple answers)

- ☐ Protection against diseases ☐ Side effect of vaccination ☐ Vaccination schedule
☐ Consequences of non-immunization ☐ Others (please specify):

Satisfaction

14. How satisfied are you with the immunization services? (only one answer)

- ☐ Not satisfied at all ☐ A little satisfied
☐ Moderately satisfied ☐ Very satisfied

15. If you are not satisfied, what is not satisfactory about the immunization services?

- ☐ Providers are poorly trained ☐ The clinic dose not open on time
☐ Waiting time are long ☐ Vaccine is not always available
☐ Providers are not respectful ☐ Other (specify):

Do you have any suggestion or opinion on immunization?

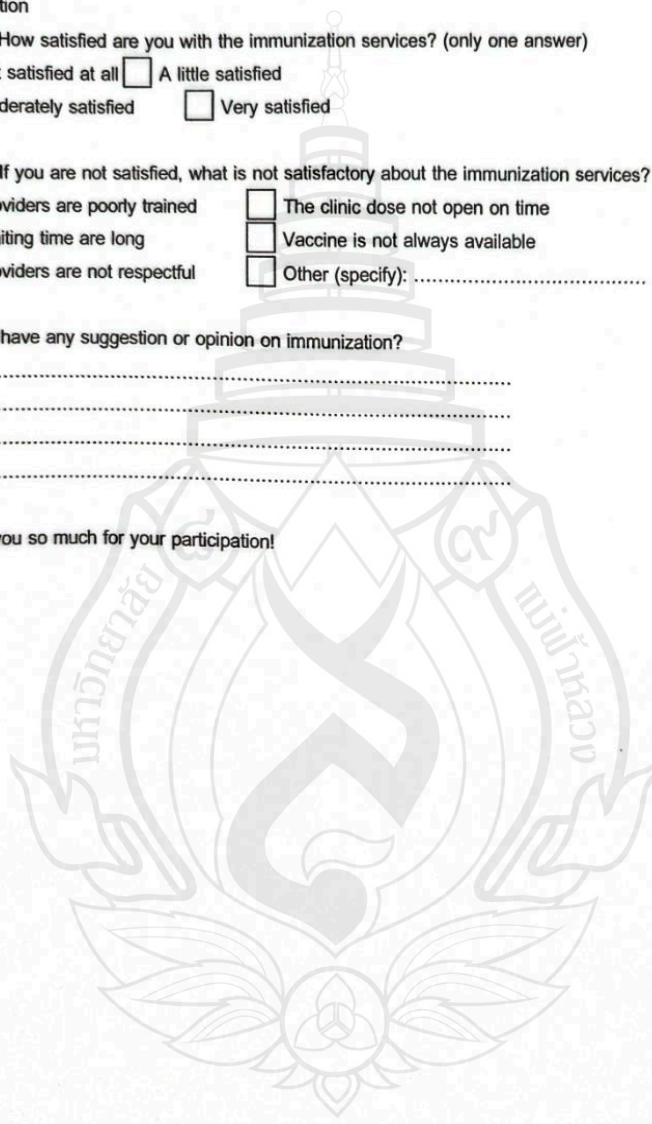
.....

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Thank you so much for your participation!



APPENDIX G

QUESTIONNAIRE (MYANMAR VERSION)

ကာကွယ်ဆေးထိုးခြင်းဆိုင်ရာမေးခွန်းလွှာ

သုတေသနကုဒ် နေ့စွဲ

အပိုင်း (၁): အောက်ပါမေးခွန်းများကို ဂရုတစိုက်ဖတ်ပြီး ဖြေဆိုပါ။

(၁) ဖြေဆိုသူ၏အသက် - နှစ်

(၂) ဖြေဆိုသူ၏ လိင်အမျိုးအစား

☐ အမျိုးသား ☐ အမျိုးသမီး

(၃) ကလေးနှင့် ဆက်နွယ်မှု

☐ မိခင် ☐ ဖခင် ☐ အဖိုး/အဘွား ☐ ဦးလေး/ဒေါ်လေး ☐ အကို/အမ

☐ အခြား (ကျေးဇူးပြု၍ဖော်ပြပါ) :

(၄) လူမျိုး

☐ ဗမာ ☐ ကရင် ☐ ရှမ်း ☐ မွန် ☐ ရခိုင်

☐ အခြား (ကျေးဇူးပြု၍ဖော်ပြပါ) :

(၅) မည်သည့်ဘာသာကို ကိုးကွယ်ပါသလဲ။

☐ ဗုဒ္ဓ ☐ ခရစ်ယာန် ☐ အစ္စလာမ်

☐ အခြား (ကျေးဇူးပြု၍ဖော်ပြပါ) :

(၆) ဖြေဆိုသူ၏ အမြင့်ဆုံးအတန်းပညာအဆင့်

☐ အတန်းကျောင်းမတက်ဖူးပါ ☐ မူလတန်းအဆင့် ☐ အလယ်တန်းအဆင့်

☐ အထက်တန်းအဆင့် ☐ အထက်တန်းထက်ပိုသောပညာရေး

(၇) ဖြေဆိုသူ၏ အလုပ်အကိုင်

☐ မိမိ ☐ စိုက်ပျိုးရေး နှင့် မွေးမြူရေး ☐ ကုန်အရောင်းအဝယ်

☐ ဝန်ဆောင်မှုလုပ်ငန်း ☐ ဆောက်လုပ်ရေး ☐ အခြား (ကျေးဇူးပြု၍ဖော်ပြပါ) :

(၈) သင်ဤရုပ်ရွာတွင်ဘယ်လောက်ကြာကြာနေပြီးပြီလဲ။

_____ နှစ် _____ လ

(၉) မိသားစု၏ လစဉ်ဝင်ငွေ: _____ ဘတ်

(၁၀) မိသားစုတွင်ရှိသော ကလေးအရေအတွက်: _____ ယောက်

(၁၁) သင်သည် ထိုင်နိုင်စွမ်းမရှိသည့်အထောက်အထားဖြင့်နေထိုင်ပါသနည်း?

☐ ပန်းရောင်ကန် ☐ ပတ်စ်ပို့ ☐ စီအိုင် စာအုပ် ☐ အခြား -

(၁၂) နေရပ်

☐ မန်းလေးတိုင်း။ ☐ ရန်ကုန်တိုင်း ☐ ရခိုင်ပြည်နယ် ☐ အခြား -

(၁၃) ကလေး၏ အသက် - _____ နှစ် _____ လ

(၁၄) ကလေး၏ လိင်အမျိုးအစား

☐ ယောက်ျားလေး ☐ မိန်းကလေး

(၁၅) ကလေး၏ ပညာရေးအခြေအနေ

☐ မသင်ကြားရသေး ☐ မူကြို/ကလေးထိန်းကျောင်း ☐ မူလတန်းအဆင့်

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(၁၅) ကလေး၏ မွေးဖွားရာနေရာ

(၁၄.၁) နိုင်ငံ

☐ ထိုင်းနိုင်ငံ

☐ မြန်မာနိုင်ငံ

(၁၄.၂) နေရာ

☐ အိမ်တွင်း မွေးဖွားမှု

☐ ဆေးရုံ/ ဆေးခန်း

(၁၆) သင့်ကလေးသည် ထိုင်းနိုင်ငံတွင်မွေးဖွားပါက ဒေသဆိုင်ရာ နိုင်ငံသားမှတ်ပုံတင်ရုံး (ခရိုင်ရုံး သို့မဟုတ် ခရိုင်) တွင် တရားဝင်မှတ်ပုံတင်ထားပါသလား။

☐ မှတ်ပုံတင်ထားပါသည်

☐ မတင်ထားပါ

☐ မဖြေလိုပါ/ မသိပါ

(၁၇) သင့်ကလေးတွင် မည်သည့်ကျန်းမာရေးအာမခံမျိုးရှိသနည်း။

☐ ရွှေပြောင်ကျန်းမာရေး အာမခံအစီအစဉ် (ပကန်စာခွန်)

☐ အခြားများ (ကျေးဇူးပြု၍ သတ်မှတ်ပေးပါ) :

☐ မရှိပါ။

(၁၈) မိခင်သည် ဤကလေး၏ကိုယ်ဝန်ဆောင်စဉ်အတွင်း ကိုယ်ဝန်စောင့်ရှောက်မှုခံယူ (ဗိုက်အပ်) ခဲ့ပါသလား။

☐ ယူခဲ့သည်

☐ မယူပါ

☐ မသိပါ

(၁၉) ကိုယ်ဝန်ဆောင်စောင့်ရှောက်မှုခံယူခဲ့ပါက၊ ဘယ်နှကြိမ် ရရှိခဲ့သနည်း။

☐ ၁ကြိမ်မှ ၅ကြိမ်

☐ ၅ ကြိမ်နှင့်အထက်

☐ မမှတ်မိပါ/ မသိပါ

(၂၀) ကလေးအားမိခင်နိုင်ငံတွင်ပျိုးထောင်ရန်အစီအစဉ် ရှိ/မရှိ

☐ ရှိ

☐ မရှိ

အပိုင်း (၂)။ ကလေး၏ကာကွယ်ဆေးထိုးခြင်း အခြေအနေကို အကဲဖြတ်ခြင်း။

(၁) သင့်တွင် ကလေး၏ ကာကွယ်ဆေးထိုးကတ်/ မှတ်တမ်း ရှိပါသလား။ (ကပ်ပြားပြပါ)

☐ ရှိသည်။

☐ မရှိပါ/ မသိပါ/ ပျောက်ဆုံး။

(၂) ကလေး၏ ကာကွယ်ဆေးထိုးခြင်းအခြေအနေ

☐ အပြည့်အဝရ

☐ တစိတ်တပိုင်းသာရ

☐ ကာကွယ်ဆေးမထိုးထားပါ။

(၃) ကာကွယ်ဆေးအပြည့်အဝမရပါက အဘယ်ကြောင့်နည်း။

☐ ကျွန်တော်သည် တစ်နေရာမှတစ်နေရာသို့ မကြာခဏပြောင်းနေသောကြောင့် ကာကွယ်ဆေးထိုးရန် ခက်ခဲစေသည်။

☐ ကျွန်ုပ်၏ကလေးအား ကာကွယ်ဆေးထိုးမည့်ရက်ချိန်းများကို မေ့သွားတတ်သည်။

☐ ကျွန်ုပ်၏ကလေးသည် ကာကွယ်ဆေးမှ အဖျားတက်ခြင်း သို့မဟုတ် ဘေးထွက်ဆိုးကျိုးဖြစ်မည်ကို စိုးရိမ်ပါသည်။

☐ အလုပ်ကြောင့် ကလေးကို ကာကွယ်ဆေးထိုးဖို့ အချိန်မလောက်ဘူး။

☐ အခြား (ကျေးဇူးပြု၍ သတ်မှတ်ပါ) :

အပိုင်း (၃)။ ကလေးကာကွယ်ဆေးထိုးမှုအကြောင်း သင်ဘယ်လောက်သိထားလဲ။ သိသလောက်ဖြေပါ။

အမှတ်	အကြောင်းအရာ	မှန်သည်	မှားသည်	မသိပါ
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၁။	ကာကွယ်ဆေးထိုးခြင်းဟာ ကလေးများကို ကာကွယ်ဆေးဖြင့်ဟန့်တားနိုင်သောရောဂါများမှ ကာကွယ်ပေးနိုင်သည်။			
၂။	ကလေးများသည် ကာကွယ်ဆေးကို မွေးပြီးပြီးချင်း (သို့မဟုတ်) စောနိုင်သမျှစောစောထိုးသင့်သည်။			
၃။	အသည်းရောင်အသားဝါ ဘီပိုးကာကွယ်ဆေးသည် သင့်ကလေးအား အသည်းရောင်အသားဝါ ဘီပိုးရောဂါမှ ကာကွယ်ပေးနိုင်သည်။			
၄။	ကြက်ညှာချောင်းဆိုးရောဂါသည် ကာကွယ်ဆေးဖြင့် ကာကွယ်လို့ မရပါ။			
၅။	ဝက်သက်ရောဂါသည် ကာကွယ်ဆေးဖြင့် ကာကွယ်နိုင်သော ရောဂါဖြစ်သည်။			
၆။	ဘီစီဂျီ (ခေါ်) ပြင်းထန်တီဘီ နှင့် အသည်းရောင်အသားဝါ ဘီပိုးကာကွယ်ဆေးများကို မွေးမြူခြင်းတွင်ထိုးရမည်။			
၇။	ဝက်သက်၊ဂျိုက်သိုး၊ ပါးချိတ်ရောင် စုပေါင်းကာကွယ်ဆေး ၏ ပထမအကြိမ်ကို အသက် (၁) နှစ်ကျော်မှ စထိုးရမည်။			
၈။	ကလေးသည် အသက်တစ်နှစ်ပြည့်သည့်အခါတွင် ပိုလီယိုကာကွယ်ဆေး စုစုပေါင်းတစ်ကြိမ်သာ ရရှိရန် လိုအပ်သည်။			
၉။	ကာကွယ်ဆေးပေးပြီးနောက် ကလေးသည်ဖျားတတ်သည်။			
၁၀။	ကာကွယ်ဆေးထိုးသည့်နေရာတွင် နာခြင်း သို့မဟုတ် ဖောင်းခြင်းဖြစ်သည်မှာ ဆေးထိုးပြီးနောက်တွင် ဖြစ်တတ်သည်။			
၁၁။	ကာကွယ်ဆေးထိုးပြီး နောက်တွင် ကလေးသည် ဝမ်းလျှောတတ်သည်။			
၁၂။	တနေ့တည်း၊ တချိန်တည်းတွင် ကာကွယ်ဆေးအများကြီး ထိုးရမည်ဆိုပါက တချို့ကာကွယ်ဆေးများအား မထိုးဘဲချန်ခဲ့နိုင် (သို့) နောက်ကျ၍ ထိုးလိုရပါသည်။			
၁၃။	ကာကွယ်ဆေးမထိုးမီ ကလေးတွင်အဖျားရှိပါက သက်ဆိုင်ရာကျန်းမာရေးဝန်ထမ်း (သို့) ဆရာဝန်နှင့် တိုင်ပင်သင့်သည်။			

အပိုင်း (၄) ။ ကာကွယ်ဆေးထိုးခြင်းကို သင်ဘယ်လိုပြင်သလဲ။ ရိုးရိုးသားသား ခံစားချက်အတိုင်းသာဖြေပါ။ မကြောက်ပါနဲ့။

အမှတ်	အကြောင်းအရာ	လုံးဝ သဘော တူသည်	သဘော တူသည်	မသေ ချာပါ	သဘော မတူပါ	လုံးဝ သဘော မတူပါ
၁။	ကလေးများထိုးရမယ့်ကာကွယ်ဆေးအားလုံးကို လက်ခံထိုးဖို့အရေးကြီးသည်ဟု ကျွန်ုပ် ယုံကြည်ပါသည်။	0	0	1	2	2

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၂။	ကလေးအတွက် တစ်ချိန်တည်းမှာ ကာကွယ်ဆေးအများကြီးမထိုးတာက ပိုကောင်းပါတယ်။	2	2	1	0	0
၃။	ကလေးတွေကိုလိုအပ်သည့်ထက်ပို၍ ကာကွယ်ဆေးများထိုးပေးခြင်းသည် ကောင်းသည်။	2	2	1	0	0
၄။	ကာကွယ်ဆေးဖြင့်ကာကွယ်နိုင်သော ရောဂါ အများစုသည် ပြင်းထန်သော ရောဂါများ ဖြစ်သည်ဟုထင်ပါသည်။	0	0	1	2	2
၅။	ကာကွယ်ဆေးထိုးခြင်းထက် ရောဂါကို ကိုယ်တိုင်ခံစားခြင်းက ကလေးအတွက် ပိုမိုကောင်းမွန်သည်ဟု ထင်ပါသည်။	2	2	1	0	0
၆။	ကာကွယ်ဆေးထိုးခြင်းနှင့်ပတ်သက်ပြီး ကျန်းမာရေးစနစ်ထမ်းများပြောသော၊ ပေးသော သတင်းအချက်အလက်များကို ယုံကြည်သည်။	0	0	1	2	2
၇။	ကာကွယ်ဆေးထိုးခြင်းနှင့်ပတ်သက်၍ စိုးရိမ်မှုများကို ကလေး၏ဆရာဝန်နှင့် ပွင့်ပွင့်လင်းလင်း ဆွေးနွေးနိုင်ပါသည်။	0	0	1	2	2

အမှတ်	အကြောင်းအရာ	အရမ်းစိုးရိမ်သည်	စိုးရိမ်သည်	မသေချာပါ	မစိုးရိမ်ပါ	လုံးဝမစိုးရိမ်ပါ
၈။	ကာကွယ်ဆေးထိုးခြင်း ၏ နောက်ဆက်တွဲ ပြင်းထန်သော ဘေးထွက်ဆိုးကျိုးဖြစ်မည် ကို သင်ဘယ်လောက် စိုးရိမ်ပါသလဲ။	2	2	1	0	0
၉။	ကာကွယ်ဆေးထိုးခြင်းက ရောဂါများကို မကာကွယ်ပေးနိုင်မည်ကို ဘယ်လောက်စိုးရိမ်ပါသလဲ။	2	2	1	0	0

အမှတ်	အကြောင်းအရာ	လုံးဝမဖြစ်ပါ	ဖြစ်ပါသည်	မသေချာပါ	ဖြစ်သည်	အရမ်းဖြစ်မိသည်
၁၀။	ယေဘုယျအားဖြင့် သင့်ကလေးအား ကာကွယ်ဆေး မထိုးပေးရဲတာမျိုး ဖြစ်ပါသလား။	0	0	1	2	2

THE MAE FAH LUANG UNIVERSITY
ETHICS COMMITTEE ON HUMAN RESEARCH

19 OCT 2025

APPROVED

၁၁။ ချမှတ်ထားသော ကာကွယ်ဆေးအစီအစဉ်အတိုင်း ကာကွယ်ဆေးထိုးခြင်းက သင့်ကလေးအတွက် ကောင်းပါသလား။

လုံးဝမသေချာပါ

လုံးဝသေချာသည်

0	1	2	3	4	5	6	7	8	9	10
2	2	2	2	2	2	1	1	0	0	0

အပိုင်း (၅)။ ကာကွယ်ဆေးထိုးခြင်းနှင့် လူမှုဆက်ဆံရေးအသိုင်းအဝိုင်း

အမှတ်	အကြောင်းအရာ	ထင်သည်	မထင်ပါ
၁။	သင်သိသော မိဘအများစုသည် သူတို့၏ကလေးများအား ကာကွယ်ဆေးထိုးပေးသည်ဟုထင်ပါသလား။		
၂။	အရင်းနှီးဆုံးမိသားစုဝင်နှင့်မိတ်ဆွေများက ကလေးကိုကာကွယ်ဆေးထိုးစေချင်သည်ဟုထင်ပါသလား။		
၃။	သင့်ရပ်ရွာအုပ်ချုပ်ရေးမှူး၊ အကြီးအကဲများကသင့်ကလေးအား ကာကွယ်ဆေးထိုးစေချင်သည်ဟုထင်ပါသလား။		
၄။	ဘာသာရေးခေါင်းဆောင်များက ကလေးကိုကာကွယ်ဆေးထိုးစေချင်သည်ဟုထင်ပါသလား။		
၅။	ကျန်းမာရေးဝန်ထမ်းတစ်ဦးက သင့်ကလေးအား ကာကွယ်ဆေးထိုးရန် အကြံပြုဖူးပါသလား။		
၆။	သင့်ကလေးကို ဆေးခန်းသို့ ခေါ်ဆောင်ရန် အခြားသူ၏မခွင့်ပြုချက် လိုအပ်ပါသလား။		
၇။	ထိုင်းလူမျိုးမိတ်ဆွေများက သင်၏ကလေးအား ကာကွယ်ဆေးထိုးရန် အကြံပြုဖူးပါသလား။		
၈။	မြန်မာရွှေ့ပြောင်းသူများအဖွဲ့အစည်း (သို့) အသိုင်းအဝိုင်းများသည် သင့်ကလေးအား ကာကွယ်ဆေးထိုးရန် ကူညီပေးမည်ဟုထင်ပါသလား။		

၉။ ကလေးအတွက် ကာကွယ်ဆေးထိုးခြင်းအကြောင်း သတင်းအချက်အလက်များကို မည်သို့ ရရှိပါသလဲ? (အဖြေများစွာရွေးချယ်နိုင်သည်)

☐ မိသားစုဝင် သို့မဟုတ် မိတ်ဆွေများ
 ☐ ရပ်ရွာအစည်းအဝေးများ
 ☐ ကျန်းမာရေးဝန်ထမ်းများ
 ☐ ကျောင်း
☐ လူမှုမီဒီယာမှ (ဖေ့စဘွတ်, မက်ဆင်ဂျာ, ဘီစီဘာ, လိုင်း, အစရှိသဖြင့်)
 ☐ အခြား (ကျေးဇူးပြုပြီး ဖော်ပြပါ).....

အပိုင်း (၆)။ ကာကွယ်ဆေးထိုးခြင်းနှင့် ကျန်းမာရေးစနစ်

၁။ သင့်ကလေးအား မည်သည့်နေရာတွင် ကာကွယ်ဆေးထိုးပေးပါသလဲ။

☐ အစိုးရဆေးရုံကြီး
 ☐ ခရိုင်ကျန်းမာရေးဌာန
 ☐ ပုဂ္ဂလိကဆေးရုံ/ ဆေးခန်း
 ☐ အခြား (ကျေးဇူးပြု၍ဖော်ပြပါ).....

၂။ သင့်နေရာမှ ကာကွယ်ဆေးထိုးရမည့်နေရာအထိ ဘယ်လောက်ဝေးပါသလဲ။

_____ ကီလိုမီတာ

၃။ ယေဘုယျအားဖြင့် သင့်ကလေးကာကွယ်ဆေးထိုးရန် တကြိမ်လျှင်အချိန်ဘယ်လောက်ကုန်ပါသလဲ။

_____ မိနစ် (သို့မဟုတ်) နာရီ

၄။ သင့်ကလေးအတွက် ကာကွယ်ဆေးတစ်ကြိမ်ထိုးရန် ပုံမှန်အားဖြင့် မည်မျှကုန်ကျသည်။ တကြိမ်လျှင် ဘတ်

၅။ ကလေးအတွက် ကာကွယ်ဆေးထိုးဝန်ဆောင်မှုရယူရန် သင့်အတွက်ဘယ်လောက်လွယ်သလဲ။ (အဖြေတစ်ခုသာရွေးပါ)

☐ လုံးဝမလွယ်ကူပါ
 ☐ အနည်းငယ်လွယ်ပါသည်
 ☐ အသင့်အတင့်လွယ်ကူပါသည်
 ☐ အလွန်လွယ်ကူသည်



၆။ ကာကွယ်ဆေးထိုးကုန်ကျစရိတ်သည် သင့်အတွက် ဘယ်လောက်လွယ်ကူသလဲ။ (အဖြေတခုသာရွေးပါ)

☐ လုံးဝမလွယ်ကူပါ ☐ အနည်းငယ်လွယ်ပါသည်။ ☐ အသင့်အတင့်လွယ်ကူပါသည် ☐ အလွန်လွယ်ကူသည်

၇။ ကာကွယ်ဆေးထိုးမှု ရယူရာတွင် အခက်အခဲဖြစ်စေသော အကြောင်းရင်း များ ကဘာများဖြစ်မလဲ။ (တစ်ခုထက်မကရွေးနိုင်သည်)

☐ အခက်အခဲမရှိပါ ☐ ဆေးခန်းသို့သွားရန်ခက်ခဲမှု ☐ ငွေကြေးအဆင်မပြေမှု ☐ အချိန်အခက်အခဲ

☐ ကျွန်ုပ်၏စာရွက်စာတမ်းအခြေအနေအခက်အခဲကြောင့်။ ☐ အခြား -

၈။ သင့်ကလေးအား ကာကွယ်ဆေးထိုးရန် ချိန်းဆိုထားသည့်အကြောင်း (ဥပမာ ဖုန်းဆက်ခြင်း၊ စာတိုပေးပို့ခြင်း) ဆက်သွယ်ခံရဖူးပါသလား။

☐ ခံရဖူးပါသည်။ ☐ မခံရဖူးပါ။

၉။ ကလေးကာကွယ်ဆေးထိုးရန် ကျန်းမာရေးဝန်ထမ်းများနှင့် ဆက်သွယ်သောအခါ ဘာသာစကားအခက်အခဲရှိပါသလား။

☐ ရှိသည်။ ☐ မရှိပါ။

၁၀။ ကာကွယ်ဆေးထိုးနေစဉ်အတွင်း စကားပြန်ဝန်ဆောင်မှု ရရှိနိုင်ပါသလား။

☐ ရှိသည်။ ☐ မရှိပါ။

၁၁။ ကာကွယ်ဆေးမထိုးခင် သင့်ကလေး၏ကိုယ်အပူချိန် စစ်ဆေးမှုကို ကျန်းမာရေးဝန်ထမ်းများက လုပ်ဆောင်ပေးပါသလား။

☐ ပေးသည်။ ☐ မပေးပါ။

၁၂။ သင့်ကလေး၏ နောက်ဆုံးကာကွယ်ဆေးထိုးသည့်အခေါက်တွင် ကျန်းမာရေးဝန်ထမ်းများမှ ကာကွယ်ဆေးထိုးခြင်းနှင့် ပတ်သက်သော

သတင်းအချက်အလက်များပေးခဲ့ပါသလား။

☐ ပေးသည်။ ☐ မပေးပါ။

၁၃။ ပေးခဲ့ပါက ဘာသတင်းအချက်အလက်များ ပြောပြခဲ့ပါသလဲ။ (တစ်ခုထက်မကရွေးနိုင်သည်)

☐ ရောဂါများမှကာကွယ်ပေးနိုင်ကြောင်း ☐ ကာကွယ်ဆေး၏ ဘေးထွက်ဆိုးကျိုးများ

☐ ကာကွယ်ဆေးမထိုးခြင်း၏ ရလဒ်များ ☐ ကာကွယ်ဆေးထိုးချိန်ဇယား၊ ထိုးရမည့်နေရာ

☐ အခြား (ကျေးဇူးပြု၍ဖော်ပြပါ).....

ဝန်ဆောင်မှုအပေါ် စိတ်ကျေနပ်မှု

၁၄။ သင့်ကလေး၏ ကာကွယ်ဆေးထိုးဝန်ဆောင်မှုအပေါ် ဘယ်လောက်ထိ စိတ်ကျေနပ်ပါသလဲ။

☐ လုံးဝမကျေနပ်ပါ ☐ အနည်းငယ်ကျေနပ်ပါသည်။ ☐ အတန်အသင့်ကျေနပ်သည်။ ☐ အင်မတန်ကျေနပ်သည်။

၁၅။ သင့်အနေနှင့် ကာကွယ်ဆေးထိုးဝန်ဆောင်မှုအပေါ် မကျေနပ်မှုရှိပါက အကြောင်းရင်း များက ဘာများဖြစ်မလဲ။

(တစ်ခုထက်မကရွေးနိုင်သည်)

☐ ကျန်းမာရေးဝန်ထမ်းများမှ ကောင်းမွန်စွာ မဆက်ဆံခြင်း

☐ ဆေးရုံ၊ ဆေးခန်းတွင် စောင့်ဆိုင်းချိန်ကြာမြင့်မှု

☐ ဆေးခန်းအချိန်မီမဖွင့်ခြင်း

☐ ကာကွယ်ဆေး အမြဲမရရှိနိုင်ပါ။

☐ အခြား (ကျေးဇူးပြု၍ဖော်ပြပါ).....

CURRICULUM VITAE

NAME Shin Moe Oo

EDUCATIONAL BACKGROUND

2023 Bachelor of Medicine and Bachelor of Surgery
University of Medicine, Mandalay

WORK EXPERIENCE

2023-2024 Assistant Medical Officer
Viriya Diagnostic and Specialist Clinic, Mandalay

2024 Facilitator for Myanmar Migrant Health Volunteer
Training in Chiang Rai Province

SCHOLARSHIP

2024 Mae Fah Luang University Partial Scholarship

