DIARRHEA PREVENTIVE BEHAVIOR OF MYANMAR IMMIGRANT CAREGIVERS WITH CHILDREN UNDER FIVE YEARS IN MUANG DISTRICT, SAMUT SAKHON PROVINCE, THAILAND

WEI YAN AUNG HTAY

A THESIS SUBMITTED IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF PRIMARY HEALTH CARE MANAGEMENT
FACULTY OF GRADUATE STUDIES
MAHIDOL UNIVERSITY
2010

Thesis
entitled

DIARRHEA PREVENTIVE BEHAVIOR OF MYANMAR IMMIGRANT CAREGIVERS WITH CHILDREN UNDER FIVE YEARS IN MUANG DISTRICT, SAMUT SAKHON PROVINCE, THAILAND

.....

Mr. Wei Yan Aung Htay
Candidate

.....

Assoc. Prof. Boonyong Keiwkarnka,
Dr.P.H.
Major advisor

.....

Asst. Prof. (Hon.) Nate Hongkrailert,
Ph.D.
Co-advisor

.....

Prof. Banchong Mahaisavariya,
M.D., Dip Thai Board of Orthopedics
Dean
Faculty of Graduate Studies
Mahidol University

.....

Ms. Supattra Srivanichakorn,
M.D., M.P.H., (Health Development),
Dip. Thai Board of Preventive Medicine
(Epidemiology)
Program Director
Master of Primary Health Care Management
ASEAN Institute for Health Development
Mahidol University

Thesis
entitled

DIARRHEA PREVENTIVE BEHAVIOR OF MYANMAR IMMIGRANT CAREGIVERS WITH CHILDREN UNDER FIVE YEARS IN MUANG DISTRICT, SAMUT SAKHON PROVINCE, THAILAND

was submitted to the Faculty of Graduate Studies, Mahidol University
for the degree of Master of Primary Health Care Management
on
April 7, 2010

.....
Mr. Wei Yan Aung Htay
Candidate

.....
Assoc. Prof. Panee Sitakalin,
Dr.P.H.
Chair

.....
Asst. Prof. (Hon.) Nate Hongkrailert,
Ph.D.
Member

.....
Assoc. Prof. Boonyong Keiwkarnka,
Dr.P.H.
Member

.....
Prof. Banchong Mahaisavariya,
M.D., Dip Thai Board of Orthopedics
Dean
Faculty of Graduate Studies
Mahidol University

.....
Ms. Supattra Srivanichakorn,
M.D., M.P.H., (Health Development),
Dip. Thai Board of Preventive Medicine
(Epidemiology)
Director
ASEAN Institute for Health Development
Mahidol University

ACKNOWLEDGEMENTS

I wish to thank my major academic supervisor, Assoc. Prof. Dr. Boonyong Keiwkarnka, whose inspiration, guidance and support from the start to the end allowed me to understand conducting research and to develop this thesis.

I would like to express the deepest appreciation to my co advisor, Dr. Nate Hogkrailert, for his useful suggestions throughout this research.

I would like to thank Mr. Peregrine W.F. Whalley, the foreign expert of ASEAN Institute for Health Development, who supported me by his attitude and his kind proof reading of this thesis.

A thank - you also to Mrs. Thip-Rada Kongtapan, Head, Office of Educational Support, who introduced me to staff at the Samuk Sakhon Provicial Health Office, and for her concern for my convenience during my data collection period in Samuk Sakhon Province.

I thank Dr. Chairat Vejjapanich, Provicial Chief Medical Officer of Samut Sakhon Provincial Health Office, and Ms. Teerada Suteeravuthi, Chief of Health System Development for Immigrant Labors Department for their kindness and support. I also thank Mr. Kittic Ruangviraiporn, registered nurse of the Samut Sakhon Provincial Health Office and all the Myanmar immigrant interviewers in Samut Sakhon Province for assisting me in collecting data with their great enthusiasm.

I would like to send my heartily unique thanks to my best friend, Dr. B Htoi Awng Mai, whose persistent encouragement, support and help enabled me to complete this thesis.

I would like to express my gratitude to my grandmother, and my parents for their support during my study at the ASEAN Institute for Health Development, Mahidol University, Thailand.

Finally, I would like to express my special thanks and acknowledgement to all the staff of the ASEAN Institute for Health Development and all of those who helped me in any way during this research.

Wei Yan Aung Htay

DIARRHEA PREVENTIVE BEHAVIOR OF MYANMAR IMMIGRANT CAREGIVERS WITH CHILDREN UNDER FIVE YEARS IN MUANG DISTRICT, SAMUT SAKHON PROVINCE, THAILAND.

WEI YAN AUNG HTAY 5238099 ADPM/M

M.P.H.M.

THESIS ADVISORY COMMITTEE: BOONYONG KEIWKARNKA, Dr.P.H., NATE HONGKRAILET, Ph.D.

ABSTRACT

This cross sectional descriptive study was conducted to study the diarrhea preventive behavior, and its related factors of Myanmar immigrant caregivers with children under five years in Muang district, Samut Sakhon province, Thailand. 294 respondents were interviewed by trained interviewers during January, 2010. Descriptive statistics used were the Chi square test and Fisher exact test which were used to identify the relationship between diarrhea preventive behavior and related factors.

The results showed that 67.35 percent of respondents had a poor level of knowledge about diarrhea, 25.51 percent had a moderate level of perception, and 59.52 percent had been exposed to a health brochure. 54.42 percent of respondents practiced a good level of diarrhea preventive behavior. There was a relationship between diarrhea preventive behavior and the following factors: type of caregiver (P - value = 0.005), family income per month (P - value = 0.000), ability to speak the Thai language (P - value = 0.000), listening to the Thai language (P - value = 0.000), the level knowledge of diarrhea (P - value = 0.003), the level of perceptions (P - value = 0.000), media (P - value = 0.000), and advice from persons (P - value = 0.009)

Government provided primary health care services should be strengthened to provide additional health education, more control of communicable disease, better environmental sanitation, and better nutrition within Myanmar immigrant communities.

KEY WORDS: DIARRHEA/MYANMAR IMMIGRANT/CAREGIVER/ PREVENTIVE BEHAVIOR/CHILDREN UNDER FIVE YEARS

99 pages

CONTENTS

CONTENTS (cont.)

Page

LIST OF TABLE

LIST OF TABLE (cont.)

LIST OF FIGURES

Figure **Page**

LIST OF ABBREVIATIONS

WHO : World Health Organization

HBM : Health Belief Model

ORS : Oral Rehydration Salt

ORT : Oral Rehydration Therapy

% : Percent

CHAPTER I
INTRODUCTION

This chapter explains the rationale and justification of this research. It also sets forth the research questions, conceptual framework, research objectives, operational definitions and the limitation of this study.

1.1 Rationale and Justification of the Study

Diarrhea is a global killer and is one of the five leading causes of childhood deaths. About 1.7 million children under five years old die because of diarrhea each year worldwide. (1)

Diarrhea is the second – leading cause of death among children under five years old. Each year, there are approximately 4 billion of diarrhea cases worldwide. In 1998, it is estimated that 2.2 million people died from the consequences of diarrhea; most were children under five years old. (1)

In developing countries, diarrhea is a major problem. Children under five years old have approximately 2.2 episodes of diarrhea annually. Each episode causes a deficiency of nutrition required for the growth of the child. Therefore, diarrhea is also an important cause of malnutrition in children. Although the mortality rate of childhood diarrhea has been decreasing worldwide, it is still high in developing countries. (1, 2, 3, 4)

Diarrhea is serious. It causes both mortality and morbidity among children. It causes malnutrition which leads to permanent mental impairment and impaired development. It also imposes a financial burden on families and health care systems. Families incur expenses, particularly medical expenses and lose time and opportunities though caring for their children with diarrhea. (6, 29)

In developing countries, diarrhea causes about 90 percent of the total deaths of children under five years old. From 2002 to 2003, over 760,000 and 680,000

children under five died in sub – Saharan Africa and in south Asia respectively. The common cause of diarrhea is rotavirus infection in both developing countries and developed countries. The burden of diarrheal diseases can be reduced by proper sanitation, drinking safe water, proper storage of drinking water and the improving the water supply. (14, 29)

The World Health Organization (WHO) has responded to diarrhea by working with member states and other partners. These organizations now work together in promoting policies, to manage diarrhea, conduct research, and develop new health care delivery strategies in developing countries. The development of rotavirus immunization and training for health care workers is also being undertaken by WHO and its partners. (2) WHO aims that the number of childhood diarrhea deaths in 2000 will be reduced by half by 2010. It also aims to reduce the 1990 mortality rate of children under five by two thirds by 2015. (4, 7)

For the reduction of diarrhea mortality, the use of health services, access to clean water and sanitation improvement, better family knowledge and preventive behavior are necessary. Moreover, deaths from diarrhea can be prevented mostly by the use of oral rehydration salts which prevent the loss of body water. Dehydration is more severe in children, especially in children under five. (1, 7)

Diarrhea is preventable. It can be prevented by exclusive breast feeding, immunization against measles, using a latrine, eating safe food, drinking safe water, and by good mother and child nutrition. Basic hygiene practices such as drinking safe water, safely disposing of feces, washing hands with soap, and protecting food can prevent diarrhea. (5, 6)

In 2009, in a report on diarrhea, WHO stated that diarrhea disease transmission can be prevented by rotavirus and measles vaccination, hand washing with soap, improved drinking water supply and community wide sanitation. These are the primary measures in the prevention of diarrhea. In addition, the disease severity can be reduced by promotion of breast feeding, and vitamin A and Zinc supplementation. These are the secondary measures in disease prevention. (18)

It also stated that the majority of deaths (88%) was due to unsafe water, inadequate sanitation and poor hygiene. Over 40 percent of the incidence of diarrhea can be reduced by hand washing with soap. In developing countries, open defecation is

still common. Children's stools are often unsafely disposed of. Therefore, safe disposal of feces plays an important role in reducing the incidence of diarrhea. (18)

In Thailand, diarrhea is one of the public health problems. Its incidence among children under five was 4,285.8 and 10,140.23 per 100, 000 population respectively in 1987 and in 2005. The mortality rates from diarrhea were 4.59 and 0.40 per 100, 000 population of children under five in 1987 and in 2005 respectively. The mortality rate for diarrhea is decreasing whilst its incidence is increasing. (10)

Table 1.1 Ranking of Disease by Cases among Foreigners, Thailand, JAN 1 - AUG 11, 2009

Rank	Diseases	Cases	Percent (%)	Deaths
1	Acute Diarrhea	10646	44.04	0
2	Malaria	4090	16.92	3
3	Pyrexia	2740	11.33	0
4	Pneumonia	854	3.53	4
5	H. conjunctivitis	851	3.52	0

Table 1.1 shows that diarrhea is the first ranked disease among foreigners in Thailand. The figure is for the period from 1 January 2009 to 11 August 2009. There was no case of acute diarrhea leading to death among foreigners in Thailand during that period. However, it is obvious that acute diarrhea is the highest number of cases (44.4%) during that period. Therefore, diarrhea is one of causes of the burden to foreigners in Thailand. (60)

Table 1.2 Ranking of Morbidity Rate of Diseases under Surveillance, Thailand, 2004

Rank	Diseases	Cases	Deaths	Morbidity Rate (Per 100,000 Pop.)
1	Acute diarrhea	1161877	93	1858.21
2	Pyrexia of unknown origin	184066	18	294.38
3	Food Poisoning	154678	12	247.38

Source: ***ANNUAL EPIDEMIOLOGICAL SURVEILLANCE REPORT 2004***

It is also obvious from Table 1.2 that acute diarrhea is the first ranked disease with a morbidity rate of 1858.21 per 100, 000 population. There were 1161877 in number of cases with 93 deaths in 2004. (58)

Table 1.3 Ranking of Mortality Rate of Diseases under Surveillance, Thailand, 2004

Rank	Diseases	Cases	Deaths	Mortality Rate (Per 100,000 Pop.)
1	Pneumonia	136323	1038	1.66
2	Tuberculosis -Total	37284	212	0.34
3	Suicide	4740	153	0.24
4	Acute diarrhea	1161877	93	0.15

Source: ***ANNUAL EPIDEMIOLOGICAL SURVEILLANCE REPORT 2004***

Consideration on mortality rate of diarrhea, acute diarrhea is ranked as the fourth in 2004 showing 0.15 mortality rates per 100, 000 populations in Table 3. (59)

Samut Sakhon Province is situated in the central region of Thailand and comprises 3 districts, 40 communes, and 288 villages. It is surrounded by Samut Songkhram, Ratchaburi, Nakhon Pathom, and Bangkok. The names of the three districts are Muang Samut Sakhon, Krathum Baen, and Ban Phaeo. (11)

The total population in Samut Sakhon Province was about 466, 000 in years 2000. Approximately twenty two percent of the population had migrated there within the previous 5 years and 0.6 percent of population spoke Burmese and Peguans languages. 6.1 percent of the total population comprised children under the age of five years old. (10)

In Muang district, the total population was about 218,000. Children under five years comprised 5.8 percent and numbered about 12,500 (10). In 2006, there were 488 immigrants' children under five years old according to the Samut Sakhon provincial health office data. This represented 2.82 percent of the total immigrant population, of 17,329. This total population covered only Myanmar Immigrants living in the Maha Chai, Tha Chalom and Krokkrak subdistricts in Muang district of, Samut Sakhon Province.

98.5 percent of the total immigrant population in these subdistricts was from Myanmar. Therefore, the total Myanmar immigrant population in Maha Chai, Tha Chalom and Krokkrak subdistricts of Muang district, Samut Sakhon Province, Thailand was 17,070 in 2006.

With regard to diarrhea preventive behavior, qualitative research was done by Kwanchit Sasiwongsaroj in 1998. Her study was entitled "Health Behavior of Burmese Mothers when children under five years have diarrheal disease: A Case Study in a Congested Burmese Area, Ranong Province". In this study, "It was also found that Burmese mothers had inappropriate behavior concerning diarrheal disease prevention; improper disposal of garbage and feces, poor hygienic practices in hand washing and preparation of food and failure to separate contaminated items to protect family members against diarrhea". (49)

Similarly, a study by Tomoko Hiruta in 2007 entitled "Diarrhea preventive behavior of caregivers with children under five years in rural Ratchaburi province, Thailand" shows that 105 out of 277 caregivers were practicing good diarrhea preventive behavior. Therefore, according to this study, only 37.91 percent of the caregivers practiced good diarrhea preventive behavior. (33)

Moreover, according to the morbidity data of all hospital outpatient departments in Samut Sakhon province, disease of the digestive system including diarrhea is ranked as the second leading cause of morbidity. The hospital reports show

that there were 142,844 cases of digestive system disease in 2006 and its morbidity rate was 31,601.47 per 100, 000 population. (55)

The distribution of causes of death among children under 5 years of age in Thailand between 2000 and 2003 showed that diarrheal diseases are the third leading cause of death, including diarrhea during the neonatal period. The figure represented 16 percent of the total number of deaths of children under 5 years of age. (56)

According to the reported cases of acute diarrhea per 100,000 population, by age-group in, Thailand in 2006, children in the 0 – 4 age group had the highest figure of all other age groups representing 10610.49 per 100, 000 population. (57)

For this reasons, this research is intended to investigate and more about how Myanmar immigrant caregivers living in the Muang district of Samut Sakhon province behave regarding diarrhea in young children.

Understanding the diarrhea preventive behavior and its related factors of Myanmar immigrant caregivers, it is expected to be helpful in designing current and future health promotion programs and projects regarding diarrhea prevention among immigrants especially within Myanmar immigrant communities.

Moreover, this study will also generate background data about diarrhea preventive behavior of Myanmar immigrant caregivers in Muang district, Samut Sakhon province which may assist the future research and other researchers, and act as a reference for health education programs.

It also assists, therefore, in reducing the mortality and morbidity of childhood diarrhea. It also helps in reducing the high incidence of the diarrhea which imposes the chronic economic burden on the families and to the national health system. Therefore, it is expected that this study will support and be useful in solving major public health problems on the present day in Thailand.

1.2 Research Questions

1. What is the existing preventive behavior of Myanmar immigrant caregivers with children under 5 years old?

2. What factors are related to diarrhea preventive behavior of Myanmar immigrant caregivers in Muang district, Samut Sakhon province, Thailand?

1.3 Research Objectives

1.3.1 General objective

To study the diarrhea preventive behavior of Myanmar immigrant caregivers with children under five years in Muang district, Samut Sakhon province, Thailand.

1.3.2 Specific objectives

1. To describe the diarrhea preventive behavior of Myanmar immigrant caregivers in Muang district, Samut Sakhon province, Thailand

2. To describe the socio - demographic characteristics, and psycho – social factors and cues to action of Myanmar immigrant caregivers in Muang district, Samut Sakhon province, Thailand

3. To identify the relationship between the socio - demographic characteristics, psycho – social factors and cues to action of the respondents, and the diarrhea preventive behavior of Myanmar immigrant caregivers in Muang district, Samut Sakhon province, Thailand.

1.4 Conceptual Framework

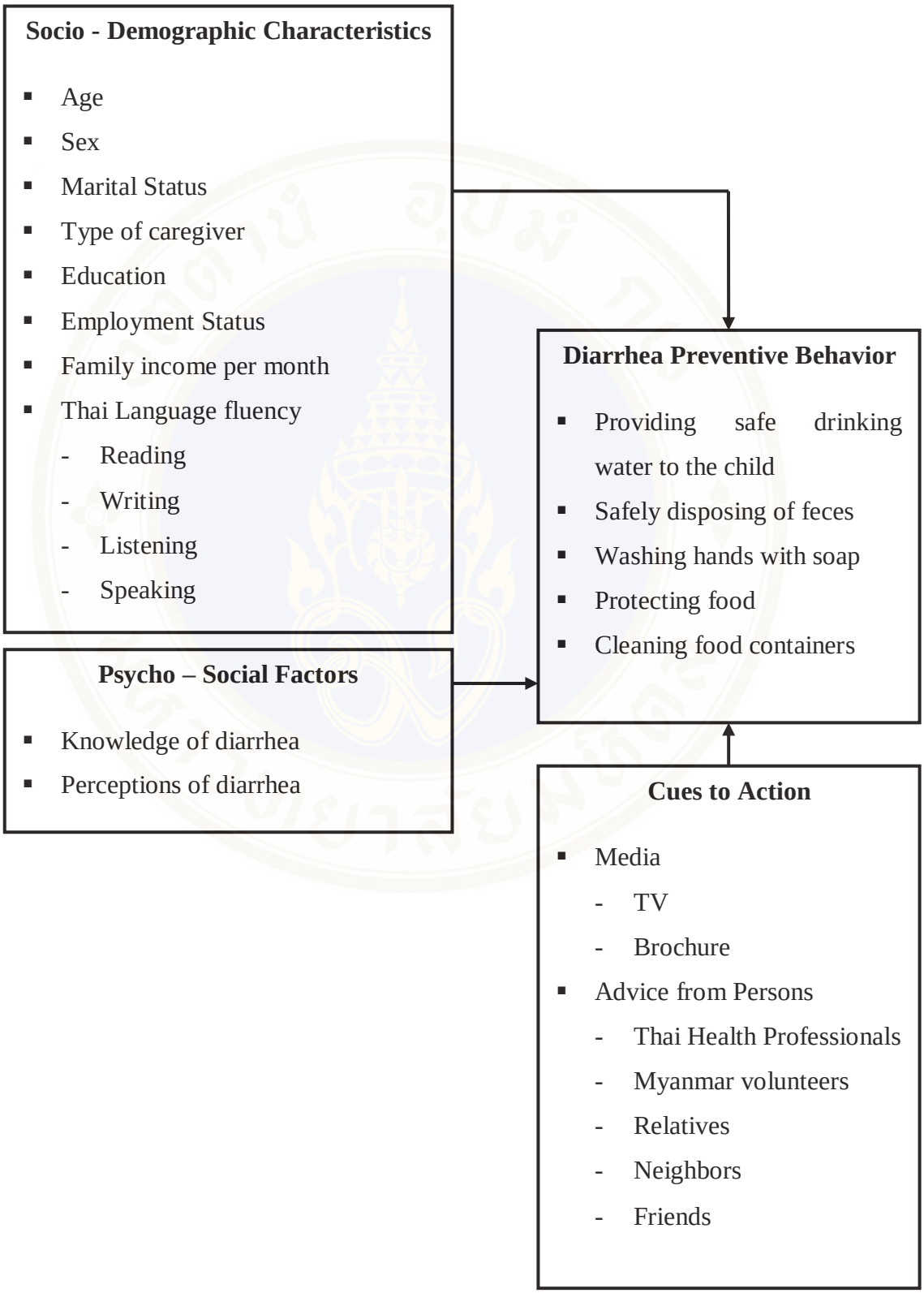


Figure 1: Conceptual Framework

1.5 Operational Definition

1.5.1 Caregiver

A caregiver refers to a person who takes care of a child and who spends most of his or her time in taking care of that child.

1.5.2 Socio - demographic characteristics

The socio - demographic characteristics are the social life and demographic factors of the caregivers. The factors for this study are age, sex, marital status, education, employment status, family income per month, and Thai language fluency.

Age: refers to the age of the caregivers on the day of interview. It has been divided into three categories: 20 – 29**,** 30 - 39, and 40 – 49.

Marital Status: refers to the current marital status of the caregiver. It is divided into four groups: married, widowed, divorced/separated and never married.

Type of caregiver: Caregivers were classified according to their relationship with the respective children as father, mother, grandparents, relatives, and others.

Education: refers to the highest level of Myanmar immigrant caregivers' formal educational achievement and was categorized as no formal education, lower than high school, high school, university, graduate and above.

Employment status: refers to the working status of the Myanmar immigrant caregivers. There are two groups: employment and unemployment.

Thai Language fluency: refers to the assessment of a respondent's Thai language skills. The assessment was done by the respective respondents subjectively. The assessments were based on reading skill, writing skill, listening skill and speaking skills of Thai Language. Each skill was graded as four levels such as none, weak, fair, or fluent.

Family income per month: refers to the total amount of money per month received by the respective respondent's family. It is divided into three groups such as below 5,000 baht, 5,000 – 10,000 baht and above 10,000 baht.

1.5.3 Psycho - social factors

Knowledge of diarrhea refers to the respondents' knowledge of the etiology, mode of transmission, prevention, management and the consequences of diarrhea.

Perceptions of diarrhea are the opinions or beliefs of the respondents' toward diarrhea and includes perceived susceptibility of diarrhea, perceived severity of diarrhea and perceived benefits of diarrhea preventive programs and perceived barrier of diarrhea preventive programs.

1.5.4 Cues to action

Cues to action are the factors that refer to the person and source of information which will stimulate respondent to practice diarrhea preventive behavior. In this study, there are two factors: media, and advice from persons.

Media such as television and brochures exposure to Myanmar immigrant caregivers were studied. Advice from Thai health professionals, Myanmar volunteers, relatives, friends, and neighbors to Myanmar immigrant caregivers were also studied in this research.

1.5.5 Diarrhea preventive behavior

In this study, diarrhea preventive behavior comprises the following four components: providing safe water to the children**,** safely disposing of feces, washing hands with soap, and protecting food.

Safe drinking water refers to the water which is boiled or chlorinated, and covered against flies and dust. Safe drinking water should be given to children**.** Moreover, all feces should be disposed of in a latrine or toilet, or buried. This behavior is referred as the safely disposing of feces in this study.

In addition, to prevent diarrhea, both hands of Myanmar immigrant caregivers should be washed with soap after defecating, after cleaning babies' bottoms, and immediately before feeding children, handling food or eating.

Similarly, food should also be protected from flies by using a cover. Clean food containers should be used to prevent diarrhea. For the reasons, these mentioned

practices were considered as the recommended diarrhea preventive behavior in this study. (6, 12, 16, 18)

1.6 Limitation of the Study

1. The first limitation is interviewer' bias although interviewers were trained. However, bias may have occurred while conducting the face to face interview with the respondents because of diverse ethnic groups of the respondents.

2. Another limitation is that Myanmar immigrant caregivers do not live in the sequential household numbers. Therefore, it was limited to randomize sampling of the households.

CHAPTER II
LITERATURE REVIEW

There are four sections in this chapter. This chapter covers the basic concept of diarrhea, theoretical approach and related studies. The first part of the chapter will review the background of diarrhea, how to prevent diarrhea, how it is transmitted and the importance of diarrhea preventive behavior. Health belief model will also be reviewed for its history, concept and the knowledge of its applications in an individual section. In the same way, the related studies concerning with dependent variable: diarrhea preventive behavior and independent variables: socio - demographic characteristics, psycho - social factors and cues to action are reviewed in two different sections.

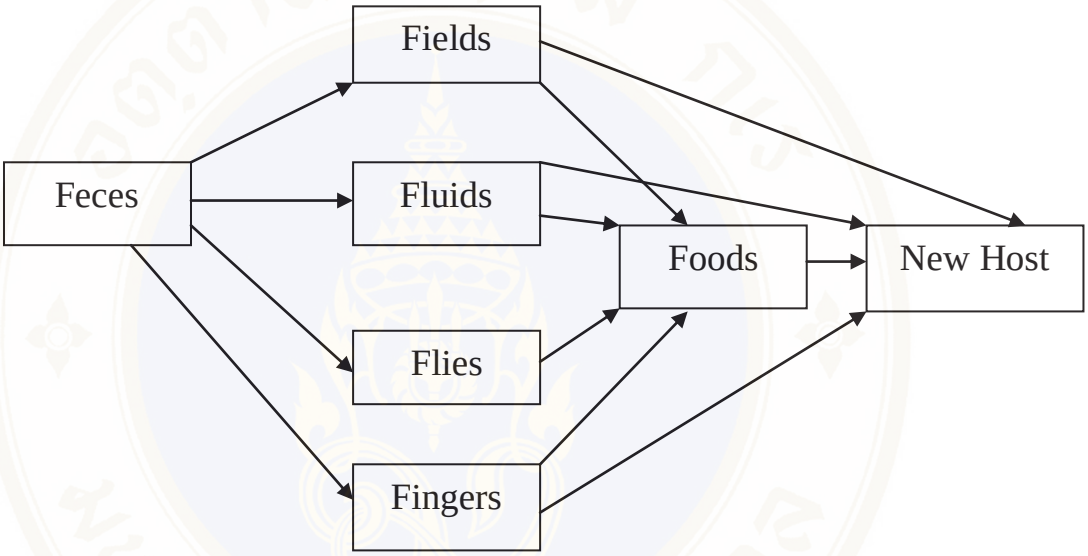
2.1 Diarrhea

Diarrhea is the passage of three or more loose or liquid stools per day, or more frequently than is normal for a particular individual. The loose or watery stools may contain blood, pus or mucus. It can lead to dehydration, shock and even death. (17, 19)

There are four clinical types of diarrhea: acute diarrhea, acute bloody diarrhea, persistent diarrhea, and diarrhea with severe malnutrition. Acute watery diarrhea, for example cholera, usually lasts for several hours or even days. Dehydration is the main danger of acute water diarrhea. Acute bloody diarrhea is also called dysentery. It can cause intestinal damage, sepsis and malnutrition. Persistent diarrhea can cause malnutrition and serious intestinal infection. It lasts for 14 days or longer in some cases. Severe systemic infection, dehydration, heart failure, vitamin and mineral deficiency are the important consequences of diarrhea with severe malnutrition. (5)

Children and adults can become infected with diarrhea by fecal-oral transmission. According to Figure 2, it can be spread by contaminated food, unhygienic drinking water, contaminated surfaces, and hands. Moreover, it is also transmitted by flies via food to the susceptible host.

Figure 2: The F – Diagram: Major Transmission Routes of Fecal – Oral Diseases



Source Wagner and Lanois, 1958

In addition, poor hygiene, lack of the clean drinking water, overcrowding, and lack of breastfeeding are also important contributing factors to diarrhea outbreaks. (1)

Diarrhea is usually caused by a variety of viruses, bacteria, and parasites. These are rotavirus, *E. coli* O157:H7, *Salmonella*, certain respiratory infections. Serious acute diarrhea in children and infants is caused by viruses especially by rotavirus. Rotavirus is the most common cause of childhood diarrhea as well as a major cause of childhood deaths. Rotavirus is easily transmissible. The virus is usually transmitted by contaminated hands or objects. Therefore, it is helpful to reduce the spread of rotavirus by washing with soap or cleansers. (52)

In infants, the most common cause is gastroenteritis. The infants are infected with a virus, which lead to the gastroenteritis. In such cases, rotavirus is the most common virus. Viral gastroenteritis can damage the lining of the small intestine. For that reason, the capacity of the small intestine becomes impaired. It then resulted in the reduction of nutrient absorption in the small intestine. Moreover, it can lead to a deficiency of the lactase enzyme for a short period of time. The lack of lactase enzyme can cause lactose intolerance. The effect of lactose intolerance can cause the secondary diarrhea in the infants. (44)

The clinical danger signs are high fever (temperature over 101.5 F, measured orally), blood in stools, and prolonged vomiting. It is much serious if the child is under 6 months. Moreover, decrease in urination, sunken eyes, and no tears when child cries, extreme thirst, unusual drowsiness or fussiness, and a dry, sticky mouth are the important signs of dehydrations. (52)

Oral rehydration solution (ORS) is the best fluid to give children with diarrhea. At the same time, the breastfeeding children should be continued and older children should follow their usual daily diet. Dehydration is a major cause of death among children with diarrhea. Therefore, it is important to replace fluids properly. (52)

Diarrhea can be prevented by the exclusive breast feeding, and frequent careful hand washing. Childhood diarrhea can also be prevented by immunization against measles and with good mother and child nutrition. In addition, using latrines, eating safe food, drinking safe water, safely disposing of feces, and protecting food can prevent the spread of diarrhea. (5, 6) Moreover it is good to disinfect toys, bathrooms, and food preparation surfaces to prevent diarrhea spread. (52)

In short, diarrhea is preventable. The lives of many of children can easily be saved by providing ORS. Therefore, it is an important public health problem which but one which can be solved by means of timely, effective and efficient interventions.

2.2 Theoretical Model

In this study, the health belief model (HBM) is applied. It was first developed by social psychologists Hochbaum Rosenstock and Kegel from the United States of America. (42)

The HBM is a psychological model. It is a theoretical model to explain and predict health behavior based on the concept that health behavior is determined by personal beliefs or perceptions about a disease. (41, 42)

The HBM was developed in the 1950s. During early 1950s, there were two major theories: the Stimulus Response Theory (Thorndike, 1898; Watson, 1925, Hull, 1943) and the Cognitive Theory (Tolman 1932; Lewis 1935, 1951; Lewin, Dembo, Festinger and Sears, 1944). Stimulus Response theorists believed that "learning results from events, or in other word, reinforcement". Skinner (1938) said that "the frequency of a behavior is determined by its consequences or reinforcements". Cognitive theorists believed that behavior is a function of value or expectation. (41, 42)

In 1974, Becker described the HBM's history and its wide - ranging applications. In 1977, Maimen et al. reviewed the HBM for measuring its several dimensions. The evolution of the model was continued by Marshall Becker from Johns Hopkins University and later at the University of Michigan. The HBM is greatly related to the cognitive predisposing factors.

The HBM has three major components. These are individual perceptions, modifying behaviors, and likelihood of action (see Figure 3).

Individual perceptions are perceived susceptibility and perceived severity that affect the individual perception of a disease. Modifying factors include demographic variables, perceived threats, and cues to action. The likelihood of action is the likelihood of taking the recommended preventive health action.

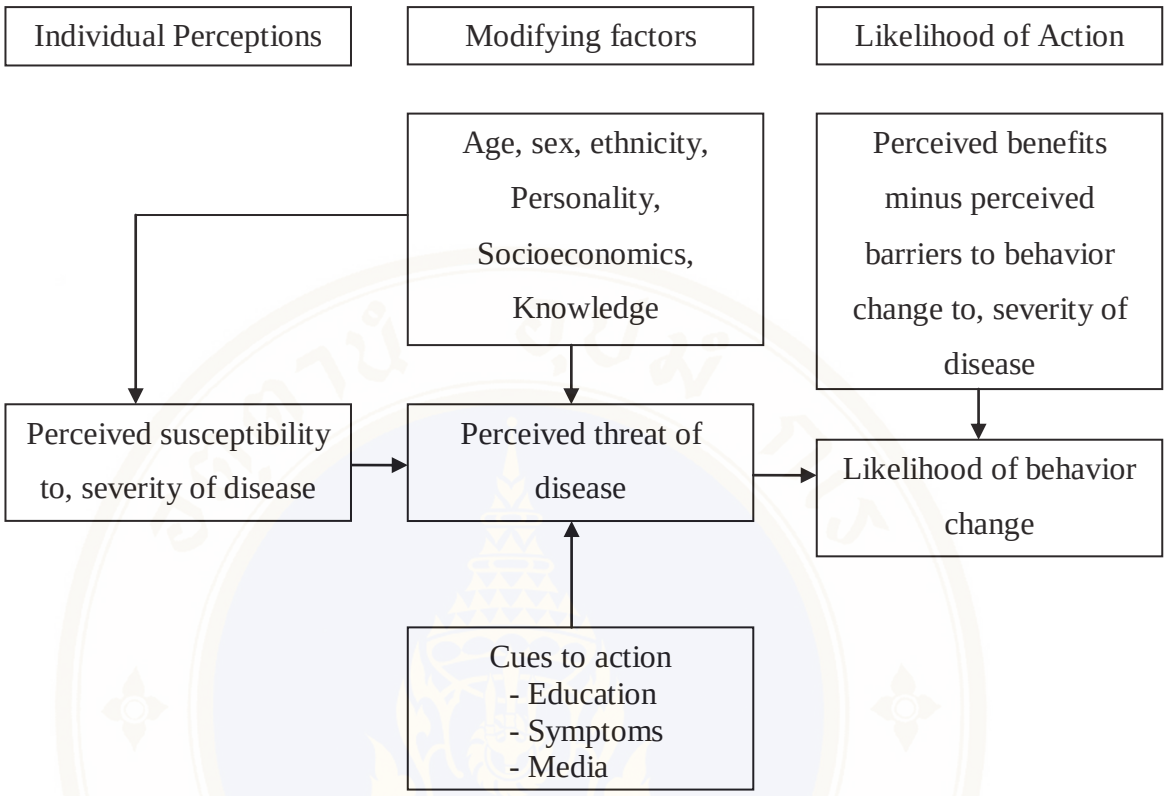


Figure 3: Health Belief Model Components and Linkages

Perceived Susceptibility - Those individuals at the high extreme of susceptibility feel there is real danger that they will experience an adverse condition or contract a given disease.

Perceived Seriousness - refers to the beliefs that the effects created by a disease would present difficulties to the individual. Emotional and financial burdens should also be taken into account when considering the seriousness of a disease.

Perceived Benefits of Taking Action - a person believes that the recommended action is beneficial and better than his or her current practice.

Barriers to Taking Action - Barriers are related to the characteristics of a treatment or preventive measures. For example, the recommended measures are inconvenient, expensive, unpleasant, painful or upsetting

Cues to Action – Cue suggest that it is necessary for the desired behavior to occur. These cues may be internal or external.

Overall the HBM is still the most frequently applied model. It is useful for programs and studies of health education and health behavior. It is still a valuable guide to practitioners in planning health education programs.

Perceived susceptibility: is a caregivers' assessment of the chances of their children getting diarrhea to their children.

Perceived seriousness: is a caregiver's judgment regarding to the severity of the diarrhea.

Perceived benefit is a caregiver's belief that a particular action is beneficial.

Perceived barrier is a caregiver's belief that a particular action is bad for them.

In this research, the concept of HBM has been used. Some modifying factors are considered as the social demographic characteristics which are composed of eight elements namely: age, sex, marital status, type of caregiver, education, employment status, family income per month, and Thai language fluency. Similarly, knowledge is included under the psychological factors as a modifying factor which is also made up with individual perceptions toward the disease. For cues to action, only mass media, such as TV, brochures and advice from such sources as Thai health professional, Myanmar volunteer, relative, neighbor, friend and others are considered in this research.

2.3 Studies Regarding the Dependent Variable

There are three types of health behavior: preventive health behavior, illness behavior, and sick-role behavior. These three different types were classified by S.V. Kasl and S. Cobb. According to them (Kasl and Cobb 1966, p.246), preventive health behavior is "any activity undertaken by an individual who believes himself to be healthy for the purpose of preventing or detecting illness in an asymptomatic state". Although preventive health behavior cannot eliminate acquiring a particular disease, it can reduce the chances of being infected or being ill. (13)

In 2007, a study of the diarrhea preventive behavior of caregivers was conducted in a rural area of Ratchaburi province, Thailand. It found that "more than half of the caregivers had need of improvement of their preventive behavior of diarrhea diseases; washing hands, safe food, clean water, washing utensils. The cross tabulation of caregivers' perceived severity (P - value = 0.007), source of information from caregivers' friends (P - value = 000) and caregivers' family members (P - value = 0.000) on the caregivers' diarrhea preventive behavior had significant association". (33) Therefore it is obvious that some of the factors such as caregivers' perceived severity, and information from caregivers' friend and family members are associated with the diarrhea preventive behavior of caregivers. It also found that majority of caregiver did not practice the recommended diarrhea preventive behavior.

WHO says that "improving access to safe drinking water and adequate sanitation as well as promoting good hygiene are key components in preventing diarrhea". In many developing countries, children' feces are often unhygienically disposed of. Most people in developing countries still practice open defecation. A high load of pathogenic microorganisms is found the children's feces. It is important and necessary to dispose of the feces safely because diarrhea is usually transmitted by the fecal oral route. As the result, proper disposal is crucial in reducing the incidence of diarrhea. (18)

In this study, safe disposal of feces was therefore considered as one of the components of diarrhea preventive behavior.

Washing hands with soap can prevent the transmission of microorganisms. Hospital studies suggest that "enteric infections can spread via contaminated hands

and those hands can be decontaminated by washing with soap and water" (Jaraporn Chompikul 1991 page 23 - 37). Therefore, hand washing can significantly reduce diarrhea. In fact, it can reduce the incidence of diarrheal incidence by 42 – 47 percent. Hand washing with soap can prevent infection from different microorganisms. Therefore, it is more effective than a single vaccine and it can be considered as a "do it yourself" vaccine. (37)

David R. Boulware in 2004 also concluded that "lack of hygiene, specifically hand washing and cleaning of cookware, should be recognized as a significant contributor to wilderness gastrointestinal illness" (38). He also recommended that "hands should be thoroughly washed with soap and water or ash and water after contact with feces, and before touching food or feeding children" (12). Therefore, it is obvious that hand washing with soap is beneficial and cost effective in preventing diarrhea. In this study, washing hands with soap is used as one of the contributing factors to individual diarrhea preventive behavior.

"In developing countries, where refrigeration facilities are usually lacking, food has to be stored at the ambient temperature, allowing bacterial pathogens to proliferate. Since some freshly cooked foods are contaminated, the practice of storing foods for consumption later in the day may be particularly unsafe. Furthermore, the storage of cooked foods containing pathogens may deposit pathogens in kitchen." (Jaraporn Chompikul 1991 page 23 - 37) (21) The contaminated food and poor sanitation to the environment can cause then diarrhea in its consumer.

Flies carry many diseases including typhoid, cholera and dysentery. Flies may carry about 6 million bacteria on their feet. Flies are major vectors in spreading many diseases including diarrhea. Many diarrheal diseases occur due to dirty food and water which are usually spoilt by flies. Flies and other insects carry microorganism from feces rubbish, and contaminated food onto the clean food. For that reason, food should be kept safely in clean covered containers which will protect it from flies and animals such as rodents. (39, 16) Therefore, protecting food from the flies is considered as part of the dependent variable in this study to identify the behavior of protecting food from flies of the respondent.

2.4 Studies Regarding the Independent Variables

2.4.1 Socio - demographic characteristics related to diarrhea

According to previous studies, education level and socio-economic status influence the diarrhea preventive behavior of mothers and caregivers. One study noted that "several reports have identified socioeconomic, environmental, maternal, nutritional, and other characteristics as risk factors for diarrhea morbidity or mortality". (21)

In 1992, Julia Declerque et al conducted a study which found that "while severity of disease and child's age are the most important predictors of health care, several socio - demographic factors are significant in determining likelihood of treatment, medical consultation and use of ORT". (23)

In 1999, the study of "Maternal knowledge and environmental factors associated with risk of diarrhea in Israeli Bedouin children" by Bilenko N, Fraser D, and Naggan L suggested that "Maternal age and education were not found to be statistically associated with the number of diarrhea episodes experienced during the follow up".

Anna C Gorter et al found that "better economic position had a positive influence on general hygiene behavior" in 1998. (27) It is interesting that social demographic characteristics influences individual behavior.

In 2004, a study mentioned that "statistical significant relationship between maternal home practices on management of childhood diarrhea and total years of their education, total number of family members, family's income, and total number of children under five years old in the family". (51)

Similarly, in 2004, a study of "Maternal practice on management of acute diarrhea" by Pancharuniti N, Shiyalap K, Nguyen M D, Wongsawass S stated that " By using Kruskal-Wallis test, it was found that occupation was significantly associated with the practices". (31)

It is also interesting that correlation analysis between the age of mother to maternal practice on management of diarrhea by Spearman's rho showed the P - value of 0.525 in a study of Pancharuniti N, Shiyalap K, Nguyen M D, and Wongsawass

S entitled “Maternal practice on management of acute diarrhea” by Pancharuniti N, Shiyalap K, Nguyen M D, and Wongsawass S. (31).

Therefore, in this study, some of the social demographic factors are considered as independent variables.

2.4.2 Psycho - Social Factors

2.4.2.1 Knowledge of diarrhea

In A.K. Sood and Umesh Kapil investigated “the knowledge and practice among rural mothers in Haryana about childhood diarrhea” was done. In this study, “the majority of mothers (83.33%) practiced food restriction during diarrhea and believed that oral rehydration therapy alone cannot treat diarrhea. Mother’s knowledge and practices during an episode of diarrhea are important factors which influence the course of disease” was stated. (22)

In addition, caregivers’ (e.g. mother) education is a possible determinant of caregiver behavior. This is an important influence on the probabilities of child survival. (23, 24, 25) Moreover, Lela Rose Bachrach and Julie Meeks Gardners highlighted that “a need to enhance educational efforts that will empower caregivers to protect their children from diarrhea associated morbidity and mortality” in 1978. (26)

Similarly, Erwin M. Labay revealed that caretakers with lower levels of education were associated with diarrheal occurrences in children under five years old. (50)

Anna C Gorter et al also stated that “schooling had a positive influence on general hygiene behavior”. (27) Therefore, caregivers’ knowledge and beliefs are related to diarrheal disease. Their attitudes to treatment are also important to the preventive program (30, 28). Therefore, individual knowledge of diarrhea and level of education are one of the important factors to study in the research. For that reason, knowledge of diarrhea is assessed and measured in this study.

2.4.2.2 Perception

Isabelle De Zoysa et al. stated in 1984 that "Diarrhea was found to be a perceived threat at community and family level and numerous possible causes of diarrhea were described which were assigned to two broad classes (1) physical causes, such as a polluted environment, diet and teething and (2) social and spiritual causes such as those associated with a depressed fontanelle". (28)

She also found that "Only perceived cause was a significant predictor for the utilization of the formal health services. Health care activities should build upon local perceptions about illness and its control". (28) In addition, the researchers suggested that "health care activities should build upon local perceptions about illness and its control" (28).

In 2004, Nonglak Pancharunit et al. found that there is a statistically significant relationship between maternal home practices on management of childhood diarrhea and maternal perception on diarrhea and cues to action for coping with diarrhea. (51)

Perceptions, therefore, are an important factor which should be considered; accordingly caregivers' perceptions of diarrhea are studied in this research.

2.4.3 Cues to action

"Cues to action supporting the mothers for home practice were also significantly correlated with their home practice on management of acute diarrhea in children. Mothers who received more information about management of acute diarrhea in children had higher level of practice". (31)

Sood and Kapil's study revealed the "most common source of knowledge about the ORT was workers (47.22%) followed by peer group women (16.51%), multipurpose workers (12.96%) and radio/television (7.40%)" (22). The study was conducted among rural mothers in Haryana. Therefore, information for diarrhea treatment among rural mothers in Haryana was derived from mass media and advice from various types of individual.

Moreover, "Of the caregivers who already knew of ORS, most of them (65%) said they had learned about it at a clinic or hospital, 17 percent from a relative,

15 percent from a friend" is stated in the study of caregiver knowledge, attitudes, and practices regarding childhood diarrhea and dehydration in Kingston, Jamaica. (26) This statement revealed that the caregivers had gained the health knowledge from health care professionals, relatives and friends.

In conclusion, childhood diarrhea is an important disease with substantial public health implications. The diarrhea preventive behavior of caregivers is very important in controlling the spread of childhood diarrhea, and warrants investigation and study using the HBM as a conceptual framework which is a useful theoretical model widely used to research public health issues.

CHAPTER III
RESEARCH METHODOLOGY

This chapter focuses on the methodology of this research. It discusses the study design, study population, sample calculation, and sampling technique. It also describes the data collection and analysis and the research instrument used in this study.

3.1 Study Design

This research utilized is the cross sectional descriptive study design. The aim of the study was to measure the knowledge, the perceptions regarding diarrhea and diarrhea preventive behavior. It was also intended to determine the relationship of socio - demographic characteristics, psycho – social factors, and cues to action on diarrhea preventive behavior.

3.2 Study Population

The study population was Myanmar immigrant caregivers who are living in Maha Chai, Tha Chalom and Krokkrak subdistricts in the Muang district of Samut Sakhon province, Thailand.

3.3 Sample Description

There are 18 sub districts in Muang district of Samut Sakhon Province, Thailand. These are Mahachai, Tha Chalom, Krokkrak, Ban Bo, Bang Tho Rat, Kalong, Na Khok, Tha Chin, Na Di, Tha Sai, Khok Krabue, Bang Namchuet, Phan Thai Norasing, Khok Kham, Ban Ko, Bang Krachao, Bang Ya Phraek, Chai Mongkhon sub districts.

In this study, Myanmar immigrant caregivers who were living in Maha Chai, Tha Chalom and Krokkrak subdistricts of the Muang district of Samut Sakhon Province were studied. The three subdistricts were chosen because of their high percentage of Myanmar immigrants. The respondents were Myanmar immigrant caregivers, who were currently giving care to children. They were selected from Myanmar immigrants living in Maha Chai, Tha Chalom and Krokkrak subdistricts of the Muang district of Samut Sakhon Province, Thailand.

3.3.1 Inclusion Criteria

1. The respondent who is currently taking care the child or children under five years old.
2. The respondent who can understand Burmese language
3. The respondent who was born in Myanmar
4. The respondent who is currently living in the Maha Chai, Tha Chalom and Krokkrak of Muang district, Samut Sakhon province
5. The respondent who is willing to participate in the research
6. The respondent must be the age of 20 years and above on the day of interview

3.4 Sample Size

The sample size was based on Cochran's simple size formula:

$$n = \frac{Z^2 pq}{d^2}$$

(46, 47, 36)

Where,

n = sample size

Z = standard normal deviation

p = the estimated proportion of caregivers' good diarrhea preventive behavior = 0.5

q = 1 – p = 0.5

d = allowable error = 0.06

Therefore,

$$n = \frac{(1.96)^2 (0.5)(0.5)}{(0.06)^2} = 266$$

The minimum sample size was 266. 10 percent of the minimum sample size was added to secure the incomplete questionnaires. Therefore, the minimum valid sample size was 292.

3.5 Sampling Technique

In this study, Myanmar immigrant caregivers from Maha Chai, Tha Chalom and Krokkrak subdistricts of the Muang district in Samut Sakhon province were studied.

There were 20 communities in Maha Chai, 6 in Tha Chalom and 3 in Krokkrak subdistricts making a total 29 communities. Thus, Maha Chai sub district comprised 69 percent of the total number of communities; Tha Chalom comprised 21 percent and Krokkrak comprised 10 percent.

A study sample was purposively selected these three subdistricts: Maha Chai, Tha Chalom and Krokkrak because of the high population of Myanmar Immigrants. The composition of the sample group was proportionate to the number of communities in these three subdistricts. Thus, 202 respondents were selected from Maha Chi sub district, 62 from Tha Chalom sub district, and 30 from the Krokkrak sub district are selected. Therefore, 294 respondents were selected.

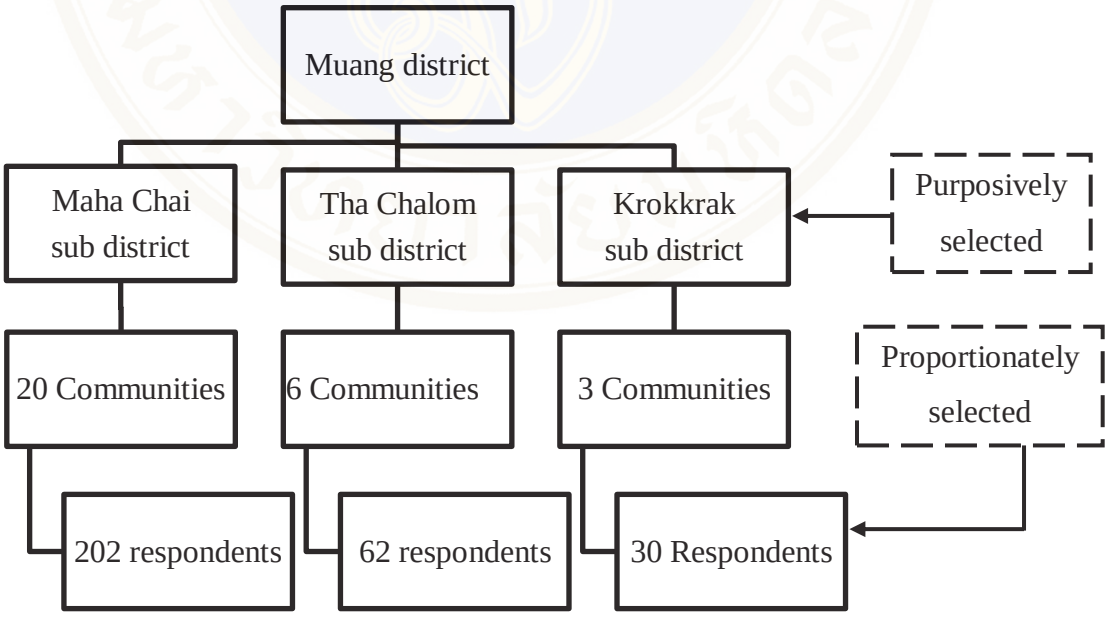


Figure 4: Sampling Technique

3.6 Research Instruments

The research instrument used as the tool for data collection was a structured questionnaire. It consisted of five parts: socio - demographic characteristics, knowledge of diarrhea, perceptions regarding diarrhea, cues to action and diarrhea preventive behavior.

3.6.1 Socio - demographic characteristics

The socio - demographic characteristics part was composed of 10 questions about age, sex, marital status, education, employment status, family income per month, and Thai Language fluency.

3.6.2 Knowledge of diarrhea

Knowledge of diarrhea was a composite variable. Each items of the composite variable was scored: “0” for an incorrect answer and “1” for a correct answer. The total score was considered as the level of knowledge of the respondents. The level of knowledge was measured by the ordinal scale: good, moderate and poor. The levels of knowledge were classified according to Benjamin Bloom’s criteria. (62)

The respondents, who answered below 60 percent of the correct answers, (i.e. 59 to 0) were graded as poor knowledge. Similarly, the respondents, who could answer between 60 percent to 80 percent of correct answer, were graded moderate knowledge and more than 80 percent of correct answers was considered as good knowledge in this study.

Good: the true score > 80%

Moderate: the true score = 60% - 80%

Poor: the true score < 60%

3.6.3 Perceptions of diarrhea

The possible answers for this part were three types: “Agree”, “Neutral”, or “Disagree”. The Likert ranking scale was used to measure the perceptions regarding diarrhea. For the positive question, the respondent who answered “Agree” received 3 points, “Neutral” 2 points and “Disagree” 1 point. For the negative question, the respondents who answered “Agree”, “Neutral”, or “Disagree” received 1, 2, or 3 points respectively. The total score were then calculated.

It is divided into three levels of perceptions such as high perception, moderate perception and low perception, according to the cut out points using best’s group rating criteria (61). The following formula is used for the cut out points of three levels of perceptions towards diarrhea.

$$\text{Class Interval (CI)} = \frac{\text{Maximum score} - \text{Minimum score}}{\text{Levels of perceptions}}$$

High perception = Minimum score + CI + CI to Maximum score

Moderate perception = (Minimum score + CI) to (Minimum score + CI + CI)

Low perception = Minimum score to Minimum score + CI

3.6.4 Cues to action

This part was intended to identify the extent to which the respondents were exposed to various forms of mass media and to the information from individuals. It therefore indicated how Myanmar immigrant caregivers in Muang district, Samut Sakhon province, Thailand received information about diarrhea.

3.6.5 Diarrhea preventive behavior

There were three possible answers for each question in this part: “Usually”, “Sometimes” or “Never”. For positive questions, the answer “Usually” was given 3 points, “Sometimes” 2 points and “Never” 1 point. Conversely, for the negative statement, “Usually”, “Sometimes”, and “Never” were given 1, 2, or 3 points respectively. The total scores and median were calculated. Respondents were then

considered to have good or bad preventive behavior according to whether they scored at, above or below the median.

Good: the true score ≥ median

Poor: the true score < median

3.7 Validity and Reliability

The questionnaire questions were based on references and experts' opinions. The created questionnaire was revised by experts. After the revision process, the questionnaire was translated into the Burmese language and reviewed by the language experts from the Institute of language and culture, Mahidol University, Thailand. The translated questionnaire was pretested for reliability.

A trial test was done only after receiving the approval from Mahidol University Institutional Review Board (MU – IRB) regarding ethics in human research. The trial test sample was selected of 30 caregivers Myanmar immigrant caregivers living in Muang district, Samut Sakhon province.

The Kuder Richardson Formula 20 (KR20) was used to determine the knowledge part of the questionnaire. Cronbach's Alpha was used to determine the perception part of the questionnaire.

The result of KR 20 for the knowledge part of the questionnaire was 0.89 and of Cronbach's Alpha for perception part of the questionnaire was 0.96. The questionnaire was then properly improved before the data collection.

3.8 Data Collection

The study was done by face to face interviews with each of the respondents using the Burmese version of the structured questionnaire. Interviewers used this questionnaire.

The interviewers were Myanmar immigrants then living in Samut Sakhon province. They could all speak, read and write Burmese language and had been

properly trained for this study. Only eligible respondents were interviewed by the trained interviewers.

The trial test and the data collection were done only after receiving the approval from Mahidol University Institutional Review Board (MU – IRB) regarding ethics in human research.

3.9 Data Analysis

The collected data was analyzed using Minitab software. The distribution of preventive behavior, socio - demographic characteristics, the level of knowledge, perceptions and cues to action of the respondents were summarized by using descriptive statistics.

Chi square test and Fisher exact test were used for the analysis of the relationship between preventive behavior of Myanmar immigrant caregivers and their socio - demographic characteristics, knowledge, perceptions and cues to action.

It was considered that the results of Chi square and Fisher exact tests were statically significant where the P-value was equal to or less than 0.05.

CHAPTER IV
RESULTS

The research is a cross sectional study of the diarrhea preventive behavior of 294 Myanmar immigrant caregivers with children under five years old in Muang district, Samut Sakhon province, Thailand. Pre testing of the questionnaire, the principal data gathering tool, was completed before the data collection for reliability and validity. The data collection was undertaken from 1st to 30th January 2010. The data were collected by the researcher and trained interviewers.

In this chapter, the results of the study are described in five sections namely: social demographic characteristics, psychosocial factors, cues to action and diarrhea preventive behaviors, and relationship between diarrhea preventive behavior and social demographic characteristics, psychosocial factors, cues to action. The data are presented using descriptive statistics in the early part of this chapter. The result of the relationship between social demographic characteristics, psychosocial factors, cues to action towards diarrhea preventive behavior is presented in the later part of the chapter.

4.1 Social Demographic Characteristics

The social demographic characteristics of 294 respondents, who were over 20 year of age at the time of interview, with children under five years old are presented in Table 4.1. The respondents were 20-29 years old (54.08 %) and 30-39 years old (41.84 %). The 77.21 percent of respondents were female (227 caregivers). Most of the respondents, 276 caregivers, were married while 1.02 percent of 294 caregivers were divorced or separated. 3.74 percent were ‘widowed’ and 1.36 percent ‘never married’.

Table 4.1 shows that mothers are the major caregivers. One sixth of the respondents confirmed the father as the second major type of caregiver.71.77 percent of the respondents had lower than high school education. 12.59 percent and 15.31

percent had high school education and no formal education respectively. Only one respondent (0.34 %) had university education.

The vast majority of the respondents (85%) were employed and 15 percent of the total respondents were unemployed. 65.99 percent of the respondents had a family income of 5000 to 10000 baht per month. 65 respondents had the income of more than 10000 baht per month and 35 respondents (11.90 %) had a family income of below 5000 baht per month.

With regard to Thai language fluency, 84.69 percent and 85.71 percent of the total respondents could not read Thai and write Thai respectively. More than half the respondents (53.74 %) understood spoken Thai poorly and 56.8 percent spoke Thai language poorly. In contrast, only one respondent could write Thai fluently and only one respondent could read Thai fluently. 4.42 percent were the fluent listeners and 7.48 percent were the fluent speakers of Thai language.

Table 4.1 Number and Percentage of Respondents by Socio – Demographic Characteristics

Socio – demographic characteristics (N = 294)	Number	Percentage
Age		
20 – 29	159	54.08
30 – 39	123	41.84
40 – 49	12	4.08
$\overline{X}$ = 29.7789, S.D = 5.56581, Min = 20, Max = 49		
Sex		
Male	67	22.79
Female	227	77.21
Marital Status		
Married	276	93.88
Widowed	11	3.74
Divorced/Separated	3	1.02
Never Married	4	1.36
Type of Caregivers		
Mother	200	68.03
Father	49	16.67
Grandparents	15	5.10
Relatives	11	3.74
Others	19	6.46
Education		
No formal education	45	15.31
Lower than high School	211	71.77
High School	37	12.59
University	1	0.33
Graduate and above	0	0.00

Table 4.1 Number and Percentage Respondents by Socio – Demographic Characteristics (cont.)

Socio – demographic characteristics (N = 294)	Number	Percentage
Employment Status		
Employed	250	85.0
Unemployed	44	15.0
Family income per month		
below 5,000 baht	35	11.90
5,000 – 10,000 baht	194	65.99
above 10,000 baht	65	22.11
Thai Language fluency		
Reading		
None	249	84.69
Weak	38	12.93
Fair	6	2.04
Fluent	1	0.34
Writing		
None	252	85.71
Weak	36	12.24
Fair	6	2.04
Fluent	0	0
Listening		
None	40	13.61
Weak	158	53.74
Fair	83	28.23
Fluent	13	4.42
Speaking		
None	19	6.46
Weak	167	56.80
Fair	86	29.25
Fluent	22	7.48

4.2 Psychosocial Factors

In this research, the psychosocial factors of the respondents were of two types namely: knowledge of diarrhea and perceptions of diarrhea. The number and percentage distribution of caregivers' knowledge of diarrhea and perceptions of diarrhea are presented in this section.

4.2.1 Knowledge of diarrhea

The distribution of Myanmar immigrant caregivers by level of knowledge of diarrhea is shown in the Table 4.2. Table 4.2 shows that the knowledge of most of the Myanmar immigrant caregiver respondents (67.35 %) was poor. 25.51 percent had a moderate level of knowledge of diarrhea whilst only 7.14 percent had a good level of knowledge of diarrhea.

Table 4.2 Number and Percentage of Respondents by the Level of Knowledge about Diarrhea

Measurement**	Number	Percentage
Good	21	7.14
Moderate	75	25.51
Poor	198	67.35

** Score: Good (> 16), Moderate (12 - 16), Poor (< 12)

Table 4.3 shows the number and percentage distribution of respondents by each item of knowledge about diarrhea followed by the comment describing the level of knowledge of each item. There are 20 items in this table.

Table 4.3 clearly shown that half of all items i.e. five items are commented the level of knowledge of Myanmar immigrant caregivers as "Poor". Similarly, other two five items are graded as "Moderate" and "Good". For the level of poor knowledge, only 13 respondents (4.4 %) and 61 respondents (20.7 %) could have answered the correct answer of the item "What is the cause of acute diarrhea diseases" and "What kind of food can sometime cause diarrhea to the child" respectively.

In contrast, 95.9 percent of the respondents correctly answered the item "How diarrhea can be transmitted" denoting the good level of knowledge of diarrhea. Similarly, it is interesting that 71.4 percent of respondents correctly answered the item "Which of the following cannot transmit diarrhea?" and 71.1 percent of the respondents correctly answered the item "What is the right way to wash your children's hands?" showing nearly touching to the lowest percentage of defining good knowledge (i.e. 80 %).

Table 4.3 Number and Percentage Respondents Related to Knowledge about Diarrhea by Item Analysis

Items (N = 294)	Correct Answer		Comment*
	Number	Percentage	
1. What is the cause of acute diarrhea diseases?	13	4.4	Poor
2. What kind of food can sometime cause diarrhea to the child	61	20.7	Poor
3. What kind of drinking water can cause diarrhea	279	94.9	Good
4. How diarrhea can be spread	274	93.3	Good
5. How diarrhea can be transmitted?	282	95.9	Good
6. What is diarrhea?	151	51.4	Poor

Table 4.3 Number and Percentage Respondents Related to Knowledge about Diarrhea by Item Analysis (cont.)

Items (N = 294)	Correct Answer		Comment*
	Number	Percentage	
7. What is the most serious consequence of childhood diarrhea?	90	30.6	Poor
8. What can happen to a child because of dehydration?	139	47.3	Poor
9. What should you do if the child does not want to drink or is extremely thirsty?	113	38.4	Poor
10. When the life of child with diarrhea is in danger?	173	58.8	Poor
11. What should you do to prevent diarrhea?	185	62.9	Moderate
12 What is the right way to wash your children's hands?	209	71.1	Moderate
13. Which one is corrected about preparing the food before providing the food to the child?	202	68.7	Moderate
14. How should all feces be disposed of to prevent diarrhea?	251	85.4	Good
15. Which of the following cannot transmit diarrhea?	210	71.4	Moderate
16. Which of the following is true for diarrhea prevention?	256	87.1	Good

Table 4.3 Number and Percentage Respondents Related to Knowledge about Diarrhea by Item Analysis (cont.)

Items (N = 294)	Correct Answer		Comment*
	Number	Percentage	
17. How should Oral rehydration salts be made?	184	62.6	Moderate
18. How frequently should Mother provide breastfeed to her child if the child is with diarrhea?	114	38.8	Poor
19. When the caregiver of a child with diarrhea should immediately go to a health worker?	104	35.4	Poor
20. How much should a child with diarrhea be given oral rehydration salt solution?	135	45.9	Poor

* Score: Good (> 16), Moderate (12 - 16), Poor (< 12)

4.2.2 Perceptions of Diarrhea

On consideration to perception of diarrhea of Myanmar immigrant caregivers, 219 respondents of the study population, this is 74.49 percent, contributed the high level of perceptions regarding diarrhea while 25.51 percent of the study sample contributed the moderate level of perceptions regarding diarrhea. The detailed figure is shown in Table 4.4. In addition to this, Table 4.5 shows the number and percentage distribution of the respondents to perception of diarrhea by item analysis.

Table 4.4 Number and Percentage of Respondents by Level of Perceptions of Diarrhea

Measurement **	Number (N=294)	Percentage
High	219	74.49
Moderate	75	25.51
Low	0	0

**Score: Low = 15 – 25, Moderate = 25.1 –35.1, High = 35.2 – 45

Table 4.5 Number and Percentage of Respondents Related to Perceptions of Diarrhea by Item Analysis

Items (N = 294)	Agree n (%)	Neutral n (%)	Disagree n (%)	$\overline{X}$	S.D.	Comment
1. More serious diarrhea is susceptible to the children under five years old than an adult	280 (95.24)	9 (3.06)	5 (1.70)	2.94	0.31	High
2. Diarrhea is not dangerous for the children under five years.	29 (9.86)	7 (2.38)	258 (87.76)	2.78	0.61	High

Table 4.5 Number and Percentage of Respondents Related to Perceptions of Diarrhea by Item Analysis (cont.)

Items (N = 294)	Agree n (%)	Neutral n (%)	Disagree n (%)	$\overline{X}$	S.D.	Comment
3. It is high risk to the children under 5 years old if they drink the safe drinking water.	43 (14.63)	13 (4.42)	238 (80.95)	2.66	0.72	High
4. Children under five years are vulnerable to catch the diarrhea if they don't eat clean food.	163 (55.44)	6 (2.04)	125 (42.52)	2.13	0.99	Moderate
5. Diarrhea cannot cause deaths in the children under five years old quickly.	58 (19.73)	12 (4.08)	224 (76.19)	2.57	0.80	High
6. Diarrhea cannot lead to malnutrition in children under five years old	34 (11.56)	44 (14.97)	216 (73.47)	2.62	0.69	High

Table 4.5 Number and Percentage of Respondents Related to Perceptions of Diarrhea by Item Analysis (cont.)

Items (N = 294)	Agree n (%)	Neutral n (%)	Disagree n (%)	$\overline{X}$	S.D.	Comment
7. Diarrhea decreases the growth rate of children under five years old.	108 (36.73)	22 (7.48)	164 (55.78)	1.81	0.94	Moderate
8. A child with diarrhea does not prone to the other diseases.	39 (13.27)	16 (5.44)	239 (81.29)	2.68	0.70	High
9. Diarrhea cannot be curable.	60 (20.41)	12 (4.08)	222 (75.51)	2.55	0.81	High
10. Diarrhea can be prevented.	240 (81.63)	24 (8.16)	30 (10.20)	2.71	0.64	High
11. Washing hands with soap, drinking safe water, safely disposing feces, protecting food can reduce the transmission of diarrhea.	256 (87.07)	23 (7.82)	15 (5.10)	2.82	0.50	High

Table 4.5 Number and Percentage of Respondents Related to Perceptions of Diarrhea by Item Analysis (cont.)

Items (N = 294)	Agree n (%)	Neutral n (%)	Disagree n (%)	$\overline{X}$	S.D.	Comment
12. Safely disposing of feces, protecting food and cleaning food containers can reduce the transmission of diarrhea.	275 (93.54)	6 (2.04)	13 (4.42)	2.89	0.43	High
13. Protecting food and cleaning food containers are effective to prevent diarrhea.	282 (95.92)	5 (1.70)	7 (2.38)	2.94	0.33	High
14. Washing hands with soap, drinking safe water, safely disposing feces are not effective to prevent diarrhea.	133 (45.24)	8 (2.72)	153 (52.04)	2.07	0.99	Moderate

Table 4.5 Number and Percentage of Respondents Related to Perceptions of Diarrhea by Item Analysis (cont.)

Items (N = 294)	Agree n (%)	Neutral n (%)	Disagree n (%)	$\overline{X}$	S.D.	Comment
15. Diarrhea prevention has other side effects such as wasting of the time and money, soap is dangerous to the skin of the hand …etc.	68 (23.13)	12 (4.08)	214 (72.79)	2.49	0.85	High

** Score: High ($\overline{X}$ 2.34 – 3.00), Moderate ($\overline{X}$ 1.67 – 2.77), Low ($\overline{X}$ 1.00 – 1.66)

4.3 Cues to Action

Cues to action in this study have two variables: media and advice from persons. Table 4.6 shows the number of respondents were exposed to brochures is the largest the numbers (175 respondents). 25.85 percent of the caregivers were exposed to TV. In addition, 43 respondents answered that other means of media are as their cues to action.

Table 4.6 Number and Percentage of Respondents Related to Media Exposure

Items	Number	Percentage
TV	76	25.85
Brochure	175	59.52
Others	43	14.63

Table 4.7 shows the number and percentage distribution of the various sources of advice. The advice from Myanmar volunteers was 29.93 percent and relatives were 21.43 percent. Similarly 19.73 percent and 16.33 percent of the respondents accepted the advice from Thai health professionals as their cues to action.

Table 4.7 Number and Percentage of Respondents Related to Advice from Persons

Advice from Persons	Number	Percentage
Thai Healthcare professionals	58	19.73
Myanmar volunteers	88	29.93
Relatives	63	21.43
Neighbors	48	16.33
Friends	18	6.12
Others	19	6.46

4.4 Diarrhea Preventive Behavior

The level of diarrhea preventive behavior was measured by the total score of diarrhea preventive behavior of each respondent. The distribution of the level of diarrhea preventive behavior of Myanmar immigrant caregivers is shown in Table 4.8. Of the total respondents (294 respondents), 160 respondents (54.42 %) were classified under the good level of diarrhea preventive behavior. Similarly, 134 respondents (45.58 percent) were classified as the poor level of diarrhea preventive behavior. The figures are shown in Table 4.8.

Table 4.8 Number and Percentage of Respondents Related to Diarrhea Preventive Behavior

Measurement (N = 294)**	Number	Percentage
Good	160	54.42
Poor	134	45.58
Median = 37 , Min = 23 , Max = 39 , S.D = 3.47		

** Score: Good (≥ 37), Poor (< 37)

The table 4.9 shows the distribution of Myanmar immigrant caregivers with children under five years old in terms of their diarrhea preventive practices. There are 13 items in this table and each item was answered by 294 respondents. In each item, there are three classifications: usually (usually do), sometimes (sometime do), Never (never do).

More than half of the respondents answered that they usually follow the recommended diarrhea preventive practices. For the answer “Sometime”, the minimum number of respondents, that is 13 respondents, answered the statement, “Do you use a latrine or toilet”, and whilst the maximum number of respondents (115 respondents) answered the statement “do you use the water which is boiled or chlorinated for your child drinking”. On the other hand, it is interesting that no one answered “Never” (Never do) to the statement “Do you cover the food to protect from flies” while 5.78 percent (17 respondents) answered “ Never” to the statement “Do you use the water which is boiled or chlorinated for your child drinking?”. For the detailed figure, the number and percentage of diarrhea preventive behavior of Myanmar immigrant caregivers by item analysis is shown in Table 4.9.

Table 4.9 Number and Percentage of Respondents Related to Diarrhea Preventive Behavior by Item Analysis

No	Items	Usually		Sometime		Never	
		N	%	N	%	N	%
1.	Do you use the water which is boiled or chlorinated for your child drinking?	162	55.10	115	39.12	17	5.78
2.	Do you cover your child drinking water against flies and dust?	237	80.61	55	18.71	2	0.68
3.	Do you use a latrine or toilet?	272	92.52	13	4.42	9	3.06
4.	Do you dispose your child's feces in a latrine or toilet or buried?	224	76.19	45	15.31	25	8.50
5.	Do you wash your hands with soap after defecating?	204	69.39	83	28.23	7	2.38
6.	Do you wash your hands with soap after cleaning the baby's bottom?	190	64.63	89	30.27	15	5.10

Table 4.9 Number and Percentage of Respondents Related to Diarrhea Preventive Behavior by Item Analysis (cont.)

No	Items	Usually		Sometime		Never	
		N	%	N	%	N	%
7.	Do you wash your hands with soap immediately before feeding children?	217	73.81	66	22.45	11	3.74
8.	Do you wash your hands with soap before handling food or eating?	193	65.65	59	20.07	42	14.29
9.	Do you cover the food to protect from flies?	265	90.14	29	9.86	0	0.00
10.	Do you clean the food containers after you have used?	271	92.18	19	6.46	4	1.36
11.	Do you provide the food to the child with a clean food container?	266	90.48	21	7.14	7	2.38
12.	Do you provide the food to the child immediately after the food preparation?	263	89.46	28	9.52	3	1.02
13.	Do you prepare the food for the child hygienically?	271	92.18	19	6.46	4	1.36

4.5 Relationship between Diarrhea Preventive Behavior and Socio - Demographic Characteristics, Psychosocial Factors, Cues to Action

In this section, there are five sub sections: 4.5.1: relationship between socio – demographic characteristics and diarrhea preventive behavior, 4.5.2: relationship between the level of knowledge of diarrhea and diarrhea preventive behavior respondents, 4.5.3: relationship between the level of perceptions of diarrhea and the level of diarrhea preventive behavior of respondents, 4.5.4: relationship between media and the level of diarrhea preventive behavior of Myanmar immigrant caregivers, 4.5.5 : relationship between advice from the persons and the level of diarrhea preventive behavior of respondents.

4.5.1 Relationship between socio – demographic characteristics and diarrhea preventive behavior

The figure, Chisquare and P - value of relationship between socio – demographic characteristics and diarrhea preventive behavior is shown in Table 4.10. There are three age groups in this study. These groups are 20 – 29 years, 30 – 39 years, and 40 – 49 years. Within the younger age group (20 – 29 years), 51.52 percent had good levels of diarrhea preventive behavior; 56.91 percent in middle age group (30 – 39 years) and 66.67 percent in older middle age group had good levels. Regarding on relationship between age and the level of diarrhea preventive behavior, it is concluded that there is no relationship at P - value 0.460.

Moreover, it is also concluded that there is no relationship between sex and diarrhea preventive behavior at P - value 0.668 as $\infty = 0.05$. 56.72 percent of the study male population and 53. 74 percent of the study female population had a good level of diarrhea preventive behavior.

Fisher exact test was done to identify the relationship between marital status, education, reading Thai language, writing Thai language respectively and diarrhea preventive behavior of respondents. It is concluded that there is no relationship between marital status (P - value = 0.131), education (P - value = 0.603), reading Thai language (P - value = 0.131), writing Thai language (P - value = 0.333)

and diarrhea preventive behavior of Myanmar immigrant caregivers with under five year children at ∞ = 0.05.

It is seen that 154 (53.66 %) married and widow respondents practiced good diarrhea preventive behavior. In contrast, 115 (44.92 %) of “no formal education and lower than high school” group practiced poor diarrhea preventive behavior. According to Table 4.10, it is recognized that 53.47 percent of none (cannot read Thai language) and Weak (can read Thai language weakly) practiced good diarrhea preventive behavior. In addition, 53.66 percent of none (cannot write Thai language) and Weak (can write Thai language weakly) practiced good diarrhea preventive behavior.

With regard to employment status, it is statistically adequate to conclude that there is no relationship between employment status and diarrhea preventive behavior with P - value 0.005, which is generated by Chi square test, where alpha error is equal to 0.05.

The P - value of the relationship between family income per month, speaking Thai language, listening Thai language and diarrhea preventive behavior were generated by Chi square test. The P - value for family income per month, speaking Thai language, listening Thai language suggests that there is a relationship between family income per month, speaking Thai language, listening Thai language and diarrhea preventive behavior. The detailed number and percentage of good diarrhea preventive behavior and poor diarrhea preventive behavior are summarized in Table 4.10.

Table 4.10 Relationship between Socio – Demographic Characteristics and Diarrhea Preventive Behavior

Socio – Demographic Characteristics	Level of Diarrhea Preventive Behavior				χ^2 (df)	P - value
	Good		Poor			
	N	%	N	%		
Age						
20 – 29	82	51.57	77	48.43	1.553	0.460
30 – 39	70	56.91	53	43.09	(2)	
40 – 49	8	66.67	4	33.33		
Sex						
Male	38	56.72	29	43.28	0.184	0.668
Female	122	53.74	105	46.26	(1)	
Marital Status						
Married and Widowed	154	53.66	133	46.34	2.831	0.131[f]
Divorced/Separated and Never Married	6	85.71	1	14.29	(1)	
Type of Caregivers						
Mother	115	57.50	85	42.50	15.028	0.005*
Father	32	65.31	17	34.69	(4)	
Grandparents	4	26.67	11	73.33		
Relatives	3	27.27	8	72.73		
Others	6	31.58	13	68.42		
Education						
No formal education and lower than high school	114	55.08	115	44.92	0.344 (1)	0.603[f]
High School and above	19	50.00	19	50.00		

Table 4.10 Relationship between Socio – Demographic Characteristics and Diarrhea Preventive Behavior (cont.)

Socio – Demographic Characteristics	Level of Diarrhea Preventive Behavior				χ^2 (df)	P - value
	Good		Poor			
	N	%	N	%		
Employment Status						
Employed	138	55.20	112	44.80	0.408	0.523
Unemployed	22	50.00	22	50.00	(1)	
Family income per month						
below 5,000 baht	17	26.15	48	73.85	35.902	0.000*
5, 000 – 10, 000 baht	113	58.25	81	41.75	(2)	
above 10, 000 baht	30	85.71	5	14.29		
Thai Language fluency						
Reading						
None and weak	154	53.66	133	46.34	2.831	0.131[f]
Fair and fluent	6	85.71	1	14.29	(1)	
Writing						
None and weak	154	53.47	134	46.53	5.130	0.333[f]
Fair and fluent	6	100	0	0.00	(1)	
Listening						
None	12	30.00	28	70.00	30.793	0.000*
Weak	75	47.47	83	52.53	(3)	
Fair	63	75.90	20	24.10		
Fluent	10	76.92	3	23.08		

Table 4.10 Relationship between Socio – Demographic Characteristics and Diarrhea Preventive Behavior (cont.)

Socio – Demographic Characteristics	Level of Diarrhea Preventive Behavior				χ^2 (df)	P - value
	Good		Poor			
	N	%	N	%		
Thai Language fluency						
Speaking						
None	11	57.89	8	42.11	26.080	0.000*
Weak	70	41.92	97	58.08	(3)	
Fair	62	72.09	24	27.91		
Fluent	17	77.27	5	22.73		

* P - value < 0.01

[f] Fisher exact test

4.5.2 Relationship between the Level of Knowledge of Diarrhea and Diarrhea Preventive Behavior of Myanmar Immigrant Caregivers

In Table 4.11, the number and percentage of respondents are divided into three groups according to the level of knowledge of diarrhea. The result of the Chi square test suggests that there is a relationship between the level of knowledge of diarrhea of and diarrhea preventive behavior with P - value 0.003 where alpha error is 0.05.

Table 4.11 Relationship between the Level of Knowledge of Diarrhea and Diarrhea Preventive Behavior of Respondents

Level of Knowledge of Diarrhea**	Diarrhea Preventive Behavior				χ^2 (df)	P - value
	Good		Poor			
	N	%	N	%		
Good	7	33.33	14	66.67	11.417 (2)	0.003*
Moderate	52	69.33	23	30.67		
Poor	101	51.01	97	48.99		

* P - value < 0.01

4.5.3 Relationship between the Level of Knowledge of Diarrhea and Diarrhea Preventive Behavior of Respondents

The number and percentage of respondents are summarized in three groups: high level perception group, moderate level perception group and low level perception group. With reference to the P - value 0.000 from the Table 4.12, it is sufficient statistically enough to conclude that there is relationship between the level of perceptions of the respondents and their diarrhea preventive behavior where alpha error is 0.05. The P - value is calculated by the Chi square test. The figure is shown in Table 4.12.

Table 4.12 Relationship between the Level of Perceptions of Diarrhea and Level of Diarrhea Preventive Behavior of Respondents

Level of Perceptions**	Diarrhea Preventive Behavior				χ^2 (df)	P - value
	Good		Poor			
	N	%	N	%		
High	32	28.32	81	71.68	54.311	0.000*
Moderate	118	26.71	43	26.71	(2)	
Low	10	50.00	10	50.00		

* P - value < 0.01

4.5.4 Relationship between Media and the Level of Diarrhea Preventive Behavior of Respondents

The P - value 0.000 calculated by Chi square test suggests that there is a relationship between media and diarrhea preventive behavior where alpha error is 0.05. The distribution of respondents from each group of media against good diarrhea preventive behavior and poor diarrhea preventive behavior is shown in Table 4.13.

Table 4.13 Relationship between Media and the Level of Diarrhea Preventive Behavior of Respondents

Media	Diarrhea Preventive Behavior				χ^2 (df)	P - value
	Good		Poor			
	N	%	N	%		
TV	25	32.89	51	67.11	21.381 (2)	0.000*
Brochure	104	59.43	71	40.57		
Others	31	72.09	12	27.91		

* P - value < 0.01

4.5.5 Relationship between Advice from Persons and the Level of Diarrhea Preventive Behavior of Respondents

Within the group of respondents who received advice from individuals, 46.55 percent of this group practiced good diarrhea preventive behavior. 47.73 percent of respondents who received the advice from Myanmar volunteers also practiced good diarrhea preventive behavior. It is also interesting that 58.73 percent of respondents who received advice from relatives and 68.75 percent of respondents who received advice of neighbors did the good diarrhea preventive behavior where only 33.33 percent of respondents who received advice from friends practiced good diarrhea preventive behavior.

The P - value 0.009 supports a conclusion that there is a relationship between advice from persons and the level of diarrhea preventive behavior of respondents where the value of alpha error is 0.05.

Table 4.14 Relationship between Advice from Persons and the Level of Diarrhea Preventive Behavior of Respondents

Advice from Persons	Diarrhea Preventive Behavior				χ^2 (df)	P-value
	Good		Poor			
	N	%	N	%		
Thai Health Professionals	27	46.55	31	53.45	15.317	0.009*
Myanmar volunteers	42	47.73	46	52.27	(5)	
Relatives	37	58.73	26	41.27		
Neighbors	33	68.75	15	31.25		
Friends	6	33.33	12	66.67		
Others	15	78.95	4	21.05		

* P - value < 0.01

CHAPTER V
DISCUSSION

In this chapter, the result of the study is discussed. The aim of the study is to describe the diarrhea preventive behavior of Myanmar immigrant caregivers with children under five years in Muang district, Samut Sakhon province, Thailand. Its specific objectives were to describe diarrhea preventive behavior of Myanmar immigrant caregivers in Muang district, Samut Sakhon province, Thailand, to describe the socio - demographic characteristics, the knowledge and perception and cues to action of Myanmar immigrant caregivers in Muang district, Samut Sakhon province, Thailand, and to identify the relationship between socio - demographic characteristics, knowledge, perceptions, and cues to action of the respondents, and the diarrhea preventive behavior of Myanmar immigrant caregivers in Muang district, Samut Sakhon province, Thailand.

To fulfill this aim, the research tool was carefully created by using references and experts' opinions. The reliability of the research tool was tested by using the Kuder Richardson Formula 20 and Cronbach's Alpha test before conducting the actual research. Interviewers were intensively trained so as to provide ethical and effective interviews and to reduce the interviewers' bias. The collected data were analyzed by using Minitab software.

Chi square test and Fisher's exact test were used to analyze the relationship between preventive behavior of Myanmar immigrant caregivers and their socio - demographic characteristics, knowledge, perceptions and cues to action.

Therefore, this chapter will discuss the findings of this research, which was described in Chapter IV.

5.1 Diarrhea Preventive Behavior of Myanmar Immigrant Caregivers

Good diarrhea preventive behavior involves providing safe drinking water for the children, of safely disposing of feces, of washing hands with soap, of protecting food, of cleaning food containers.

In 2007, a study of the diarrhea preventive behavior of caregivers in a rural area of Ratchaburi province, Thailand, found out that 37.91 percent of caregivers had had good diarrhea preventive behavior (33).

However, this research showed that 54.42 percent of Myanmar immigrant caregivers practiced a good level diarrhea preventive behavior whilst 45.58 percent practiced a poor level diarrhea preventive behavior. The median is its cut out point between good level diarrhea preventive behavior and poor level diarrhea preventive behavior.

WHO stated that "improving access to safe drinking water and adequate sanitation as well as promoting good hygiene are key components in preventing diarrhea". (18)

This research, suggested 55.1 percent of the respondents used water which is boiled or chlorinated for their child drinking. 80.61 percent of the respondents also covered their children's drinking water against flies and dust.

Therefore, it is suggested that much more effort should be used in promoting good hygiene practices within Myanmar immigrant caregivers groups by using drinking water which is boiled or chlorinated for their child drinking.

A high load of pathogenic microorganisms is found in children's feces. It is important and necessary to dispose of feces safely because diarrhea is usually transmitted by the fecal oral route. As the result, proper disposal is crucial in reducing incidence of diarrhea. (18)

The figure of this research showed that 92.52 percent of the study Myanmar immigrant caregivers usually used a latrine or toilet and 76.19 percent of usually disposed their children's feces in a latrine or toilet, or buried them. Therefore, it is indicated that more encouragement should be provided for Myanmar immigrant caregivers to dispose their child's feces in a latrine or toilet or buried.

Washing hands with soap can prevent the transmission of microorganisms. (Jaraporn Chompikul 1991 pages 23 - 37). Therefore, hand washing can significantly reduce diarrhea. Hand washing with soap can prevent infection from many microorganisms.

It is also recommended that "hands should be thoroughly washed with soap and water or ash and water after contact with feces, and before touching food or feeding children" (12).

In this research, it was found out that 69.39 percent of the studied Myanmar immigrant caregivers usually washed their hand with soap after defecating. Similarly, 64.63 percent of the respondents usually washed their hands with soap after cleaning a baby's bottom. Moreover, 73.81 percent and 65.65 percent of the total respondents answered that they usually washed their hands with soap immediately before feeding children and before handling food or eating respectively.

Washing hands with soap is an easy way to prevent diarrhea and other important diseases. All Myanmar immigrants should be encouraged to practice washing their hands with soap.

Flies carry many diseases including typhoid, cholera and dysentery. Flies and other insects carry microorganisms from feces, rubbish and contaminated food onto the clean food. For that reason, food should be kept safely and in clean covered containers. (39, 16)

In this research, 90.14 percent and 92.18 percent of the study respondents usually practiced covering food to protect from flies and cleaning food containers after you have used respectively. Therefore, about 10 percent of the respondents protected food sometime, or never.

David R. Boulware 2004 concluded that "lack of hygiene, specifically hand washing and cleaning of cookware, should be recognized as a significant contributor to wilderness gastrointestinal illness" (38).

90.48 percent of respondents usually provided their children's food in clean containers. 89.46 percent of the total respondents provided the food to the child immediately after the food preparation and 92.18 percent prepared the food for the child hygienically. The figure suggested that Myanmar immigrant caregivers had had

certain level of good practice in concerning with cleaning food containers and providing hygienic food.

5.2 Relationship between Socio-Demographic Characteristics and Diarrhea Preventive Behavior of Respondents

According to previous studies, education level and socioeconomic status influence diarrhea preventive behavior of mothers and caregivers. A study found that "several reports have identified socioeconomic, environmental, maternal, nutritional, and other characteristics as risk factors for diarrhea morbidity or mortality". (21)

In 1992, Julia Declerque et al, conducted a study which found that "while severity of disease and child's age are the most important predictors of health care, several socio - demographic factors are significant in determining likelihood of treatment, medical consultation and use of ORT". (23)

The table 4.10 shows that there is no relationship between age, marital status, sex, education, employment status, Thai language reading, or Thai language writing and diarrhea preventive behavior. Therefore, it seems that some socio - demographic characteristics were not associated with diarrhea preventive behavior.

In 1996, the study of "The Relationship of Psychosocial Factors on Child Carer's Behavior Related to Diarrheal Disease Among Children Under 5 years of Age in Ratchaburi Province" by Troung T showed that there was a significant association between occupation of caretakers and diarrhea among children under 5 years of age. (62)

In 2004, Pancharuniti N, Shiyalap K, Nguyen M D, and Wongsawass S presented that "it was found that occupation was significantly associated with the practices". (31)

However, the result of chi square test shown in Table 4.10 found out that there was no relationship between employment status, and diarrhea preventive behavior (P - value = 0.523).

In 1999, Bilenko N, Fraser D, and Naggan L presented "Maternal age and education were not found to be statistically associated with the number of diarrhea

episodes experienced during the follow up" in their study of "Maternal knowledge and environmental factors associated with risk of diarrhea in Israeli Bedouin children".(63)

Similarly, correlation analysis between the age of mother to maternal practice on management of diarrhea by Spearman's rho generated P - value of 0.525 in the research of "Maternal practice on management of acute diarrhea" by Pancharuniti N, Shiyalap K, Nguyen M D, and Wongsawass S. (31)

The result of chi square test shown in Table 4.10 also confirmed that there is no relationship between age and level of diarrhea preventive behavior of respondents (P - value = 0.460) and between education of respondent and the respondent's behavior regarding diarrhea prevention (P - value = 0.603).

On the other hand, it is suggested that there is a relationship between family income per month, speaking Thai language, and listening to Thai language and diarrhea preventive behavior as shown in Table 4.10. Therefore some socio - demographic characteristics of Myanmar immigrant caregivers are associated with diarrhea preventive behavior.

Pancharuniti N, Shiyalap K, Nguyen M D, and Wongsawass S found out that "there were statistical significant associations between maternal practices on childhood diarrheal management and some of the socio-demographic characteristics of the mothers, such as family income,…." in 2004.(31)

In 1998, Anna C Gorter et al found out that "better economic position had a positive influence on general hygiene behavior". (27) Likewise, this research confirmed that there is relationship between family income per months of Myanmar immigrant caregivers and their diarrhea preventive behavior.

Therefore, it supports the above statement as we as the study in 2004, which mentioned that "a statistically significant relationship between maternal home practices on management of childhood diarrhea and total years of their education, total number of family members, family's income, and total number of children under five years old in the family". (51)

5.3 Relationship between Psycho - Social Factors and Diarrhea Preventive Behavior of Respondents

Knowledge of diarrhea

The study of risk factors relating to the diarrheal disease occurrence among under 5 children at Samut Sakhon province, Thailand revealed that 17.1 percent of the care takers had good knowledge. (50)

However, in this study, Table 4.2 shows that the knowledge of only 7.14 percent of respondents has good knowledge.

In Table 4.11, the result of the Chi square test suggests that there is a relationship between the level of knowledge of diarrhea and diarrhea preventive behavior with P - value 0.003 where alpha error is 0.05.

Therefore, it supports the study of "Knowledge and Practice among Rural Mothers in Haryana about Childhood Diarrhea" by A.K. Sood and Umesh Kapil. (22)In addition, it also supports the statement that "caregivers" (e.g. mother) education is a possible determinant to caregiver behavior. This is an important influence on the probabilities of child survival". (23, 24, 25) As well as this, it also supported the statement of Anna C Gorter et al that "schooling had a positive influence on general hygiene behavior". (27)

Perceptions of diarrhea

In 2004, Nonglak Pancharunit, Kitti Shiyalap, Nguyen Manh Dung, Somsak Wongsawass studied that there is statistical significant relationship between maternal home practices on management of childhood diarrhea and maternal perception on diarrhea and cues to action for practice of diarrhea management. (51) The P - value in Table 4.12 suggests that there is a relationship between the level of perceptions of the respondents and their diarrhea preventive behavior where alpha error is 0.05. Therefore, it is interesting that the result of this research supports the previous study of Nonglak Pancharunit, Kitti Shiyalap, Nguyen Manh Dung, Somsak Wongsawass.

5.4 Relationship between Cues to Action and Diarrhea Preventive Behavior of Respondents

Media

A study of A.K. Sood and Umesh Kapil revealed that "the most common source of knowledge about the ORT was workers (47.22%) followed by peer group women (16.51%), multipurpose worker (12.96%) and radio/television (7.40%)" (22). Only 7.4 percent of the respondents used media whilst others received the advice from persons for knowledge about ORT.

In the present study, 175 respondents (59.5 %) had been exposed to the brochures, which are a form of media. 76 respondents (25.9 %) were also exposed to the television. Unlike the study of A.K. Sood and Umesh Kapil, 25 percent of the respondents received information from television. Only 43 respondents (14.6 %) received information from other means of media.

This suggests that brochures are an efficient way to communicate with the Myanmar immigrant population. However, television and other means of media should be also used in distributing information about health preventive behavior. Moreover, the Table 4.13 shows the P - value 0.000 which suggests that there is a relationship between media and diarrhea preventive behavior where alpha error is 0.05. Therefore, media is one means of effectively information about health related issues to Myanmar immigrant caregivers.

Advice from Persons

A study of caregiver knowledge, attitudes, and practices regarding childhood diarrhea and dehydration in Kingston, Jamaica, revealed that "Of the caregivers who already knew of ORS, most of them (65%) said they had learned about it at a clinic or hospital, 17 percent from a relative, 15 % from a friend" . (26) This result suggested that hospitals or clinics play a major role in distributing of knowledge of ORT.

However, the study showed that 29.9 percent of the respondents received the advice from Myanmar volunteers and 21.4 percent from relatives. In addition, 19.7

percent and 16.3 percent of the respondents accepted the advice from Thai health professionals and from neighbors respectively.

47.73 percent of the respondents who received the advice from Myanmar volunteers practiced good diarrhea preventive behavior. 58.73 percent of respondents whose group received advice from relatives practiced good diarrhea preventive behavior. 68.75 percent of the respondents who received advice of neighbors practiced good diarrhea preventive behavior. 33.33 percent of respondents who received advice of friends practiced good diarrhea preventive behavior.

The P - value 0.009 supports the conclusion that there is a relationship between advice from persons and the level of diarrhea preventive behavior of Myanmar immigrant caregivers where the value of alpha error is 0.05.

Therefore, the advice from persons and the level of diarrhea preventive behavior of Myanmar immigrant caregivers are associated. It is suggested that neighbors and relatives are playing an important role within the Myanmar immigrant group concerning their health. However, advice from Thai health professionals and from Myanmar volunteers should not be neglected in consideration of the migrants' health because 29.9 percent and 19.7 percent respectively of the Myanmar immigrant caregivers were exposed to Myanmar volunteer and Thai health professionals.

CHAPTER VI
CONCLUSION AND RECOMMENDATIONS

In this chapter, the conclusion of the research will be described and further diarrhea preventive measures will be recommended.

6.1 Conclusion

The study design is the cross sectional descriptive study design. The study was conducted in Muang district of Samut Sakhon province, Thailand. The target population was Myanmar immigrant caregivers with children under five years old. The aim of the study was to study the diarrhea preventive behavior of Myanmar immigrant caregivers with children under five years in Muang district, Samut Sakhon province, Thailand. The sample size was 294. A study sample was selected using the cluster sampling technique.

The research instrument was a structured questionnaire. The questionnaire was translated into Burmese language from English language. The translated questionnaire was pretested for reliability. The result of KR 20 for the knowledge part of the questionnaire was 0.89 and of Cronbach's Alpha for the perception part of the questionnaire was 0.96. The face to face interview was done by the trained interviewers. The interviewers used this questionnaire.

The data collection was done during the month of January 2010. The collected data was analyzed by using Minitab software. Chi square test or Fisher exact test was used for the analysis of association between preventive behavior of Myanmar immigrant caregivers and their socio - demographic characteristics, knowledge, perceptions and cues to action.

1. For the distribution of socio - demographic characteristics, 54.08 percent was within the age of 20 – 29. 22.79 percent was male and 77.21 percent was female. 93.88 percent were married. 68 percent were mothers. 71.8 percent had had education lower than high school. 85 percent were employed. 65.99 percent received a family income from 5000 to 10, 000 baht per month. 84.7 percent and 85.7 percent could not read or write Thai Language respectively. 53.7 percent could listen to Thai language weakly and 56. 8 could speak Thai language poorly.

2. For psychosocial factors, 67.35 percent had poor level of knowledge of diarrhea and 25.51 percent had moderate level of perception.

3. For cues to action, 59.5 percent had been exposed to brochure and 29.9 percent received advice from Myanmar volunteers.

4. The diarrhea preventive behavior included providing safe drinking water to the children, of safely disposing of feces, of washing hands with soap, of protecting food, and cleaning food containers.

5. 54.42 percent of the Myanmar immigrant caregivers practiced good level diarrhea preventive behavior whilst 45.58 percent practiced poor level diarrhea preventive behavior.

6. There is no relationship between age, marital status, sex, education, employment status, Thai language reading, or Thai language writing and diarrhea preventive behavior. However, there is a relationship between family income per month, speaking Thai language, and listening Thai language and diarrhea preventive behavior.

7. There is a relationship between the level of knowledge of diarrhea of Myanmar immigrant caregivers, the level of perceptions of Myanmar immigrant caregivers, media, and advice from persons and Myanmar immigrant caregivers' diarrhea preventive behavior.

6.2 Recommendations

6.2.1 Recommendations for Implementation

The followings are recommended to prevent diarrhea among children.

1. It should have an adequate supply of clean water available in the habitant of Myanmar immigrants. Without clean water, it is not possible to promote the hygienic behaviors. Without hygienic behavior, it is difficult to prevent diarrhea among children under five years old.

2. Hygienic behavior such as hand washing with soap frequently and others should be promoted within Myanmar immigrant groups. The hygienic behavior should be sustainable and should be monitored with appropriate research. All families of Myanmar immigrants should have fly proof latrines. The feces of the children should be disposed of properly in latrines.

3. Thai language fluency should be promoted within the Myanmar immigrant community so that its members can understand and assess health information in Thai and Thai health care services. This research also found out that there is association between speaking Thai language, listening Thai language and diarrhea preventive behavior.

4. Health education should be provided to Myanmar immigrants from media such as brochure and from persons such as Thai health professionals, Myanmar volunteers, relatives, neighbors to get the awareness of health.

5. Certain specific strategies of convincing community members to adopt and maintain the diarrhea preventive behaviors should be involved in designing diarrhea preventive programs. The health care program should start at the individual level such as providing knowledge of diarrhea home management by caregivers and progress to the community level preventive measures and national level preventive measures. The promotion and preventive programs should be specific to Myanmar immigrants as most of them may have language barriers.

6. Flies should be controlled. Environmental sanitation should be promoted near Myanmar immigrants' communities. Flies breeding places should be found and removed.

7. Moreover, it is also recommended to strengthen the primary health care health system and primary health care services within Myanmar immigrant communities. The primary health care delivery should be at the community level. The components of primary health care such as health education, control of communicable disease, environmental sanitation, and nutrition are important for diarrheal diseases.

6.2.2 Recommendations for Further Study

1. For future research, qualitative research should explore the belief, culture and social concerns of Myanmar immigrants concerning diarrhea and its prevention.

2. Future research should be concentrated on observation of caregivers' practices regarding diarrhea prevention as this study did not observe the respondents' diarrhea prevention practice.

3. Future research should be carried out about the impact of language difficulties on health.

4. Specific researches with specific caregivers such as mothers should also be conducted so as to draw the specific preventive strategies for diarrhea prevention among young children.

REFERENCES

1. Diarrhea. *Rehydration Project.* [Online] 2009. [cited 2009 Oct 16]. Available from : www.rehydrate.com
2. Resources for diarrhea disease control. [Online] 2009. [cited 2009 Oct 16] Available from : www.eddcontrol.org.
3. Diarrhoeal disease. *World Health Organization.* [Online] 2009. [cited 2009 Oct 13] Available from : http : // www.who.int/ mediacentre / factsheets/fs330/en/index.html.
4. World Health Organization, Unicef. *WHO/UNICEF JOINT STATEMENT.* Geneva : World Health Organization; 2004.
5. Diarrhea. In : Detels R, McEwen J, Beaglehole R, Tanaoka H(editors). Oxford textbook of public health. 4th ed. New York : Oxford University Press; 2005. p. 1612 - 13.
6. Unicef, Water supply and sanitation collabrative concil, Enviromental Health Project, USAID. *Preventing Childhood Diarrhea Through Hygiene Improvement.* New York : Unicef; n.d.
7. Diarrhoeal disease. *United Nations special session on children.* [Online] [cited 2009 Oct 13] Available from: http://www.unicef.org/specialsession/ about/sgreport pdf /19_DiarrhoealDisease_D7341Insert_English.pdf.
8. Ministry of Public Health. Thailand Health Profile 2001 - 2004. Nonthaburi : The Ministry; 2001 – 2004.
9. Ministry of Public Health. Thailand Health Profile 2005 - 2007. Nonthaburi : The Ministry; 2005 - 2007.
10. Samut Sakhon Public Health Office. Report on Population and Mapping Alien Community at Municipal Samut Sakhon 2006. Samut Sakhon, Thailand: Ministry of Public Health; 2009.
11. Samut Sakhon .[Online] [cited 2009 Oct 13] Available from www.wikipedia.com.
12. United Nations Children's Fund, UNICEF. Facts for Life. New York : UNICEF ; 2002.

13. Lowe JB, Clavrino A. Preventive Health Behavior. *Answer.com.* [Online] [cited 2009 Nov 7] Available from: http://www.answers.com / topic / preventive-health-behavior

14. Drinking Water. *Wikipedia.* [Online] [cited 2009 Oct 13] Available from : www.wikipedia.com

15. Health through safe drinking water and basic sanitation. *World Health Organization.* [Online] World Health Organization. [cited 2009 Oct 16] Available from : www.who.int

16. World Health Organization, United Nations Development Programme. *Food, Water and Family Health: A Manual for Community Educators.* Geneva : WHO; 1994.

17. Diarrhoea. *World Health Organization.* [Online] World Health Organization. [cited 2009 Oct 13] Available from : www.who.int

18. Unicef, World Health Organization. *Diarrhoea: Why children are still dying and what can be done.* New York : Unicef ; 2009.

19. *Fact Sheet: Childhood diarrhoea.* s.l. : Washtenaw County Public health; 2006.

20. *Patient and Family Educaiton, Diarrhea.* Chicago : Children's hospital and Clinics of Minnesota; 2008.

21. Chompikul J. Effect of piped water supply on the incidence of acute diarrhea in children aged 0 - 2 years old Pattani, Pattani province, Thailand; 1991.

22. Sood A.K. Kapil , U. Knowledge and Practices among rural mothers in Haryana about childhood diarrhea. *The Indian Journal of Paediatrics.* 1990; 57 (4) : 563 - 566.

23. Declerque J, Bailey P, Janowitz B, Dominik R , Fiallos C. Management and Treatment of Diarrhea in Honduran children: Factors associated with mothers' Health care behavior. *Soc. Sci. Med.* 1992; 34 (6) : 687 - 695.

24. Lindenbaum S, Chakraborty M, Elias M. The influence of maternal education on infant and child mortality in Bangladesh: *International Center for Diarrhoeal Disease Research.;* 1985. Special Publication.

25. Caldwell J C, McDonald P. 1981. Influence of maternal education on infant and child mortality: Levels and causes. *International Population Conference,*

Vol. 2 *Manila;* Liege ;1981; 79-96. Ordina Editions.

26. Bachrach L R, Gardner, Julie Meeks. 2002. Caregiver knowledge, attitude and practices regarding childhood diarrhea and dehydration in Kingston, Jamaica. *Pan Am J Public Health.* 2002; 12, (1): 37 – 44.
27. Anna C Gorter, Peter Sandiford, Johanna Pauw, Patricia Morales, Rosa Maria Perez, and Henk Alberts. 1998. Hygiene behaviour in rurual Nicaragua in relation to diarrhoes. *International Journal of Epidemiology.* 1998, 27, pp. 1090 - 1100.
28. De Zoysa I, Carson D, Feachem R, Kirkwood B, Lindsay-Smith E, Loewenson R. Perception of Childhood Diarrhoea and its Treatment in Rural Zimbabwe. *Soc. Sci. Med.*1984; 19(7): 727 - 34.
29. Chen KT, Fan SF, Tang RB, Huang YF, Lee PI, Chen PY, Tang CW, Chen HC. Hospital – based study of the economic burden associated with rotavirus diarrhea in Taiwan. *Vaccine.* 2007; 25(21): 4266 - 72.
30. Natalya Bilenko, Drora Fraser, Lechaim Naggan. Maternal knowledge and environmental factors associated with risk of diarrhea in Israeli Bedouin children. *European Journal of Epidemiology.* 1999; 15; 907 - 912.
31. Pancharuniti N, Shiyalap K, Nguyen M D, Wongsawass S. 2004. Maternal practice on management of acute diarrhea. *Journal of Public Health and Development.* 2004, Vol. 2, 1.
32. World Health Organization. Facts and figures: Water, Sanitation and hygiene links to health. *World Health Organization.* [Online] [cited: October 16, 2009.] Avaliable from: www.who.int.
33. Hiruta, Tomoko. 2007. *Diarrhea Preventive Behavior of Caregivers with Children Under five years in rural Ratchaburi Province, Thailand.* Nakhonpathom : ASEAN Institute for Health Development, 2007
34. Sakisaka K, Wakai S, Wongkhomthong S. 2002. Domestic Hygiene Behaviour of Mothers with Children Aged 0 - 5 years old in Tayabo Village, Nueva Ecija, The Philippines. *Asia Pacific Journal of Public Health.* 2002, 14(2): 91 - 8.
35. Cochron WG. Sampling techinques. 3rd ed., New York: Wiley; 1977
36. Daniel W W.. *Biostatistics: A foundation for analysis in the Health science.*

Hoboken,N.J: 2005: John Wiley and Son; 2005.

37. The Hand Washing Handbook. *Water and Sanitation program.* [Online] [cited: Oct 21 2009] Available from: www. wsp . org / UserFiles / file / Handwashing _ Handbook.pdf.
38. PEOD6. *EDIS.* [Online] April 2009. [cited: Oct 29 2009] http://edis.ifas.ufl.edu..
39. Fly diseases. *Oracle thinkquest education foundation.* [Online] [cited: Oct 21 2009] Avaiable from: http://library.thinkquest.org/ C0117442/ html/ diseases.html.
40. Janz N K., Champion VL, Strecher V J. The Health Belief Model. In: Rimer B K, Lewis FM, K Glanz K. *Health Behavior and Health Education : theory , research, and practice. 3rd ed.* San Franciso : John Wiley & Sons; 2002.
41. *Jones and Barlett Publishers.* [Online] [cited: 2009 Oct 24] Available from : http://www.jbpub.com/samples/0763743836/Chapter%204.pdf.
42. Theory Cluster (Preferred link). *University of Twente.* [Online] [cited: 2009 Oct 24] Available from : http:// www.tcw.utwente.nl / theorieenoverzicht /Theory %20clusters / Health%20 Communication/ Health_Belief _Model.doc /.
43. Becker MH., Editor, The Health Belief Model and Personal Health Behavior, Slack, London (1974). *Social Science & Medicine.* 1980 14 (3): 227-29.
44. Smith, Editor . *The British Medical Association Complete Family Health Encyclopedia* . London: Dorling Kindersley; 1990; 353-355.
45. Wapedia. *Wiki: Amphoe Mueang Samut Sakhon.* [Online] [cited: 2009 Oct 29] Available from : http: // wapedia.mobi/ en / Amphoe_Mueang_Samut_ Sakhon#4.
46. James E. Bartlett, II, Joe W. Kotrlik, Chadwick C. Higgins. Organizational Research: Determining Appropriate Sample Size in Survey Research. *Information Technology, Learning, and Performance.* Spring. 2001;19 (1).
47. Israel, G D. Determining Sample Size. *EDIS.* [Online] November 1992. [cited: 2009 Oct 29] Available from : http://edis.ifas.ufl.edu..
48. Amphoe Mueaung Samut Sakhon. *Wikipedia.* [Online] Wikipedia. [cited: 2009 Oct 29,.] http://en.wikipedia.org/wiki/Amphoe_Mueang_Samut_Sakhon.

49. Sasiwongsaroj., K. 1998. Health Behavior of Burmese Mothers when children under five years have. *[M.A. thesis in Cultural Studies]*. Nakhonpathom: Faculty of Graduate Studies, Mahidol University; 1998.

50. Labay, E M. 2007. Risk Factor Relating to the Diarrheal disease occurence among under 5 children at samut sakhon porvince, Thailand. [*M.P.H.M thesis in Primary Health Care Management]*. Nakhonpathom : Mahidol University, 2007.

51. Pancharunit N , Shiyalap K, Nguyen M D, Wongsawass S. 2004. Maternal practice on management of acute diarrhea. *Journal of Public Health and Development.* 2004, 2 (1).

52. Childhood Diarrhea. *CDC* . [Online] [cited: 2009 Nov 3] Available from : http://www.cdc.gov/od/oc/parents/.

53. Barlet J E, II, Kotrlik J W., Higgins C C.. *Information Technology, Learning, and Performance Journal.* 2001. 1, Spring; 19 (1).

54. HOUSEHOLD INCOME , EXPENDITURE AND DEBT. *National statistic office of Thailand.* [Online] [cited: 2009 Nov 15] Available from : http://web.nso.go.th/indicator/ eco_ied08.pdf.

55. *Provicial Health Status Report, 2006. Samut Sakhon: Provicial Health Status;* 2006.

56. Labay E M.. Distribution of causes of death among children under 5 years of age Thailand 2000 – 2003. In: *Risk factors relating to the diarrheal disease occurrence among under 5 children at Samut Sakhon province, Thailand. [M.P.H.M thesi s in Primary Health Care Mangement]* Nakhonpathom : Faculty of Graduate Studies, Mahidol University; 2007. 4.

57. Bureau of Epidemiology. *Department of Disease Control, Ministry of Public Health.* [Online] [cited : 2009 Nov 15] Available from : http://203.157.15.4/surdata/annualdata/d0249.pdf. ISSN 0857-6521.

58. Ranking of Morbidity Rate of Diseases under Surveillance, Thailand, 2004 (2547). *ANNUAL EPIDEMIOLOGICAL SURVEILLANCE REPORT 2004.* [Online] [cited: November 15, 2009.] Avaialble from : http://203.157.15.4/Annual/Annual47/Table1-16/Table1.html.

59. Table 2 Ranking of Mortality Rate of Diseases under Surveillance. *ANNUAL EPIDEMIOLOGICAL SURVEILLANCE REPORT 2004.* [Online] [cited: November 15, 2009.] Available from : http://203.157.15.4/Annual/Annual47/Table1-16/Table2.html.

60. Foreigner Disease Surveillance. *Bureau of Epidemiology, Department of disease control.* [Online] [cited: Nov 15 2009] Available from : http: // 203.157.15.4 / camp/506/52/f506_0908191551.pdf.

61. Best J W. *Research in education* 4th ed. New Jersey : Printice Hall ; 1981.

62. Troung T. *The Relationship of Psychosocial Factors on Child Carer's Behavior Related to Diarrheal Disease Among Children Under 5 years of Age in Ratchaburi Province.* [M.P.H.M. Thesis in Primary Health Care Management]. Nakhon Pathom: Faculty of Graduate Studies, Mahidol University; 1996.

63. Bilenko N , Fraser D , Naggan L. Maternal knowledge and environmental factors associated with risk of diarrhea in Israeli Bedouin children. *European Journal of Epidemiology* , 1999. *15*, 907-12.

APPENDICES

APPENDIX A
QUESTIONNAIRE

DIARRHEA PREVENTIVE BEHAVIOR OF MYANMAR IMMIGRANT CAREGIVERS WITH CHILDREN UNDER FIVE YEARS IN MUANG DISTRICT, SAMUT SAKHON PROVINCE, THAILAND

Date of registration ___/___/___ Registration No _____

Community reference_____ Name of Interviewer_____

PART I SOCIO - DEMOGRAPHIC CHARACTERISTICS

Please fill in the blank provided or tick the appropriate block according to the respondent's answer.

1. How old are you? …… years

2. What is your sex?

   □ 1. Male
   □ 2. Female

3. What is your marital status?

   □ 1. Married
   □ 2. Widowed
   □ 3. Divorced/Separated
   □ 4. Never Married

4. Which type of caregivers are you?

   □ 1. Mother
   □ 2. Father
   □ 3. Grandparents
   □ 4. Relatives
   □ 5. Others (please specify) ……

5. What is the highest level of education you obtained?
   - □ 1. No formal education
   - □ 2. Lower than High School
   - □ 3. High School
   - □ 4. University
   - □ 5. Graduate and above
   - □ 6. Others (Please specify) …….

6. What is your employment status?
   - □ 1. Employed
   - □ 2. Unemployed

7. What is your family income per month? ---------- Baht

8. What do you think of your Thai Language Fluency?

Please tick appropriate cell according to the respondent's answer. Please tick one cell for one question only.

	None	Weak	Fair	Fluent
Reading				
Writing				
Listening				
Speaking				

PART II KNOWLEDGE OF DIARRHEA

Please tick in one appropriate block according to the respondent's answer.

9. What is the cause of acute diarrhea diseases?
   - □ 1. A virus
   - □ 2. A bacteria
   - □ 3. A parasite
   - □ 4. A variety of viruses, bacteria, and parasites

10. What kind of food can sometime cause diarrhea to the child?

- □ 1. The food which is too sweet
- □ 2. The food which is too watery
- □ 3. The food which is too salty
- □ 4. The food which is too spicy

11. What kind of drinking water can cause diarrhea?

- □ 1. Chlorinated Water
- □ 2. Boiled water
- □ 3. Unclean water
- □ 4. Protected clean water

12. How diarrhea can be spread?

- □ 1. by Flies
- □ 2. by Ants
- □ 3. by Mouse
- □ 4. by Mosquitoes

13. How diarrhea can be transmitted?

- □ 1. by the clean hands
- □ 2. by drinking clean water
- □ 3. by using clean food containers
- □ 4. by the unhygienic hands

14. What is diarrhea?

- □ 1. Diarrhea is a sudden decrease in the number and looseness of stools
- □ 2. Diarrhea is a sudden increase in the number and looseness of stools
- □ 3. Diarrhea is a sudden increase in the number and with very hard stools
- □ 4. Diarrhea is no change in the number and the consistency of stools

15. What is the most serious consequence of childhood diarrhea?

□ 1. Crying aloud
□ 2. Not eating well
□ 3. Loosing water from the body
□ 4. More playful than usual

16. What can happen to a child because of dehydration?

□ 1. It can lead a child to cry
□ 2. It can lead a child to the death
□ 3. It can lead a child to eat more
□ 4. It can lead a child to play more

17. What should you do if the child does not want to drink or is extremely thirsty?

□ 1. Immediately seek help from a relative
□ 2. Immediately provide a cup of coffee
□ 3. Immediately seek help from a trained health worker
□ 4. Immediately provide food

18. When the life of child with diarrhea is in danger?

□ 1. If the child stop defecation immediately
□ 2. If there is blood in the feces
□ 3. If the child is playing
□ 4. If the child is alert

19. What should you do to prevent diarrhea?

□ 1. Both of your hands should be washed with soap and water after defecation and before providing food to a child
□ 2. Both of your hands should not be washed with water after defecation and before providing food to a child
□ 3. Both of your hands be washed only after handling with dirty things
□ 4. Both of your hands should be washed only after defecation

20. What is the right way to wash your children's hands?

□ 1. Using water and wash sometimes
□ 2. Using soap and water and wash frequently
□ 3. Using soap and water and wash sometimes
□ 4. Using water and wash frequently

21. Which one is corrected about preparing the food before providing the food to the child?

□ 1. The food should be thoroughly cooked
□ 2. The food should be kept for sometime without cover
□ 3. The food should be kept for a long time
□ 4. The food should be cooked very quickly

22. How should all feces be disposed of to prevent diarrhea?

□ 1. All feces should be disposed of in a latrine or toilet or buried
□ 2. All feces should be disposed of on the surface of ground
□ 3. All feces should be disposed of in the open drainage
□ 4. All feces should be disposed of unhygienically

23. Which of the following cannot transmit diarrhea?

□ 1. The dirty household's drinking water
□ 2. The dirty food preparing surface
□ 3. The children's unwashed hand
□ 4. The clean utensils

24. Which of the following is true for diarrhea prevention?

□ 1. It is acceptable to provide dirty food to the children
□ 2. Food and drinking water for children should be covered to protect flies
□ 3. Drinking water for children should not be boiled.
□ 4. Food for children should not be fully cooked.

25. How should Oral rehydration salts be made?
    - □ 1. Oral rehydration salts be mixed with little amount of clean water
    - □ 2. Oral rehydration salts should use without mixing any water
    - □ 3. Oral rehydration salts be mixed with tap water
    - □ 4. Oral rehydration salts be mixed with the proper amount of clean water

26. How frequently should Mother provide breastfeed to her child if the child is with diarrhea?
    - □ 1. More often than usual
    - □ 2. As usual
    - □ 3. Less than usual
    - □ 4. No breastfeeding

27. When the caregiver of a child with diarrhea should immediately go to a health worker?
    - □ 1. if the child is alert
    - □ 2. if the child is crying sometimes
    - □ 3. if the child does not want to drink or is extremely thirsty
    - □ 4. if the frequency of child defecation is decreasing

28. How much should a child with diarrhea be given oral rehydration salt solution?
    - □ 1. Only one liter of oral rehydration salt solution per day
    - □ 2. Half litter of oral rehydration salt solution per day
    - □ 3. As much as possible per day
    - □ 4. Not more than one cup of oral rehydration salt solution per day

PART III PERCEPTIONS ABOUT DIARRHEA

Please tick only one in the appropriate cell according to the respondent's answer.

Statements	Agree	Neutral	Disagree
29. More serious diarrhea is susceptible to the children under five years old than an adult.			
30. Diarrhea is not dangerous for the children under five years.			
31. It is high risk to the children under 5 years old if they drink the safe drinking water.			
32. Children under five years are vulnerable to catch the diarrhea if they don't eat clean food.			
33. Diarrhea cannot cause deaths in the children under five years old quickly.			
34. Diarrhea cannot lead to malnutrition in children under five years old			
35. Diarrhea decreases the growth rate of children under five years old.			
36. A child with diarrhea does not prone to the other diseases.			
37. Diarrhea cannot be curable.			
38. Diarrhea can be prevented.			
39. Washing hands with soap, drinking safe water, safely disposing feces, protecting food can reduce the transmission of diarrhea.			
40. Safely disposing of feces, protecting food and cleaning food containers can reduce the transmission of diarrhea.			
41. Protecting food and cleaning food containers are effective to prevent diarrhea.			

PART III PERCEPTIONS ABOUT DIARRHEA (Cont.)

Please tick only one in the appropriate cell according to the respondent's answer.

Statements	Agree	Neutral	Disagree
42. Washing hands with soap, drinking safe water, safely disposing feces are not effective to prevent diarrhea.			
43. Diarrhea prevention has other side effects such as wasting of the time and money, soap is dangerous to the skin of the hand …etc.			

PART IV CUES TO ACTION

Please tick in one block for one question only.

44. If you would like to get the last and updated information of diarrhea, which media do you usually use for your information?

□ 1. TV

□ 2. Brochure

□ 3. Others (Please specify……)

45. Do you usually get the information of diarrhea from whom?

□ 1. Thai Healthcare professionals (e.g. doctor, nurse, midwife, public health officer,….etc)

□ 2. Myanmar volunteers

□ 3. Relatives

□ 4. Neighbors

□ 5. Friends

□ 6. Others (Please specify……..)

PART V DIARRHEA PREVENTIVE BEHAVIOR

Please tick the appropriate cell according to the respondent's answer. Please tick one cell for one question only.

Questions	Usually	Sometime	Never
46. Do you use the water which is boiled or chlorinated for your child drinking?			
47. Do you cover your child drinking water against flies and dust?			
48. Do you use a latrine or toilet?			
49. Do you dispose your child's feces in a latrine or toilet or buried?			
50. Do you wash your hands with soap after defecating?			
51. Do you wash your hands with soap after cleaning the baby's bottom?			
52. Do you wash your hands with soap immediately before feeding children?			
53. Do you wash your hands with soap before handling food or eating?			
54. Do you cover the food to protect from flies?			
55. Do you clean the food containers after you have used?			
56. Do you provide the food to the child with a clean food container?			
57. Do you provide the food to the child immediately after the food preparation?			
58. Do you prepare the food for the child hygienically?			

APPENDIX B
QUESTIONNAIRE
(BURMESE VERSION)

မေးခွန်းလွှာ

ထိုင်းနိုင်ငံ စမွတ်စခွန်နယ်၊ မူခရိုင်ရှိ အသက်ငါးနှစ်အောက် ကလေးအား
စောင့်ရှောက်သောမြန်မာ ရွှေ့ပြောင်း နေထိုင်သူများ၏
ပမ်းပျက်ပမ်းလျှောရောဂါကာကွယ်မှု နှင့် ပတ်သက်သော အမူအကျင့်များ

နေ့စွဲ ____/____/____ အမှတ်စဉ် _____

နေရာရည်ညွှန်းချက်_____ မေးမြန်းသူ၏အမည်_____

အပိုင်း ၁ လူမှုရေးရာ နှင့်ပတ်သက်သော အချက်အလက်များ

အောက်ပါတို့တွင် ဖြေကြားသူ၏ အဖြေများကို ဖြည့်စွက်ပါ။

၁. သင်၏ အသက် ဘယ်နှစ်နှစ်ရှိပြီလဲ ။ _____ နှစ်

၂. သင်သည်

□ ၁. ကျား

□ ၂. မ

၃. သင်သည်

□ ၁. လက်ထပ်ပြီး

□ ၂. မုဆိုးဖို/မုဆိုးမ

□ ၃. ကွာရှင်းပြီး/ကွဲနေသော

□ ၄. လက်ထပ်ဖူးခြင်း မရှိ

၄. သင်သည် မည်သည့်ကလေးစောင့်ရှောက်သူ ဖြစ်ပါသနည်း ။

□ ၁. အမေ

□ ၂. အဖေ

□ ၃. အဖိုး/အဖွား

□ ၄. ဆွေမျိုး

□ ၅. အခြား (တိကြစွာဖော်ပြရန်) .....

၅. သင်၏၊ အမြင့်ဆုံးပညာအရည်အချင်းကို ဖော်ပြပါ ။

□ ၁. ကျောင်းမနေဘူးပါ

□ ၂. အထက်တန်းအဆင့်၏၊ အောက်

□ ၃. အထက်တန်းအဆင့်

□ ၄. တက္ကသိုလ်အဆင့်

□ ၅. ဘွဲ့ရအဆင့်နှင့်အထက်

□ ၆. အခြား (တိကြစွာဖော်ပြရန်) .....

၆. သင်၏၊ အလုပ်အကိုင် အခြေအနေ ကိုဖော်ပြပါ ။

□ ၁. အလုပ်အကိုင်ရှိ

□ ၂. အလုပ်လက်မဲ့

၇. သင့် မိသားစု၏၊ တစ်လဝင်ငွေ ကိုဖော်ပြပါ ။ _____ ဘတ်

၈။ သင်သည် ထိုင်းဘာသာစကားကိုပြေပြစ်စွာ တတ်ပါသလား ။
အောက်ပါအကွက်များတွင် ဖြေကြားသူ၏ အဖြေများကို ခြစ်ပါ။ မေးခွန်းတစ်ခုအတွက် တစ်ကွက်သာခြစ်ပါ။

	မတတ်ပါ	အနည်းငယ်	အတော်အသင့်	ပြေပြစ်စွာ
အဖတ်				
အရေး				
နားလည်မှု				
အပြော				

အပိုင်း ၂ ဂမ်းပျက်ဂမ်းလျှောရောဂါနှင့်ပက်သက်သော ဗဟုသုတ

အောက်ပါအကွက်များတွင် မေးခွန်းတစ်ခုအတွက် တစ်ကွက်သာ ဖြေကြားသူ၏ အဖြေများကို ခြစ်ပါ။

၉။ ဂမ်းပျက်ဂမ်းလျှောရောဂါသည်အောက်ဖော်ပြပါ အကောင်များကြောင့် ဖြစ်တတ်သည်။

□ ၁။ ဗိုင်းရပ်ပိုး

□ ၂။ ဘတ်တီးရီးယားပိုး

□ ၃။ ကပ်ပါးကောင်

□ ၄။ အမျိုးမျိုးသော ဗိုင်းရပ်ပိုး၊ ဘတ်တီးရီးယားပိုး၊ ကပ်ပါးကောင်

၁၀။ မည်သို့သော အစားအစာသည် ကလေးကို ဂမ်းပျက်ဂမ်းလျှောရောဂါ ဖြစ်စေသနည်း။

□ ၁။ ချိုလွန်းသောအစားအစာ

□ ၂။ အရည်များလွန်းသောအစားအစာ

□ ၃။ ငန်လွန်းသောအစားအစာ

□ ၄။ စပ်လွန်းသောအစားအစာ

၁၁. မည်သည့် သောက်ရေသည် ဂမ်းပျက်ဂမ်းလျှောရောဂါ ကိုဖြစ်စေသနည်း။

□ ၁. ကလိုရင်းခပ်ထားသောရေ

□ ၂. ကျိုချက်ထားသောရေ

□ ၃. မသန့်ရှင်းသောရေ

□ ၄. သန့်ရှင်းသောရေ

၁၂. ဂမ်းပျက်ဂမ်းလျှောရောဂါ သည်မည်သို့ပြန့်နှံ့ နိုင်သနည်း။

□ ၁. ယင်ကောင်ဖြင့်

□ ၂. ပုရွက်ဆိတ်ဖြင့်

□ ၃. ကြွက်ဖြင့်

□ ၄. ခြင်ဖြင့်

၁၃. ဂမ်းပျက်ဂမ်းလျှောရောဂါ သည်မည်သို့ကူးစက်နိုင်သနည်း။

□ ၁. သန့်ရှင်းသောလက်ဖြင့်

□ ၂. သန့်ရှင်းသောရေဖြင့်

□ ၃. သန့်ရှင်းသောအစားအစာဖြင့်

□ ၄. မသန့်ရှင်းသောလက်ဖြင့်

၁၄. ဂမ်းပျက်ဂမ်းလျှောရောဂါ ဆိုသည်မှာ အဘယ်နည်း။

□ ၁. ဂမ်းပျက်ဂမ်းလျှောရောဂါဆိုသည်မှာရုတ်တရက်ဂမ်းသွားကြိမ်လျော့နည်းပြီး ဂမ်းပျော့ပျော့သွားခြင်း

□ ၂. ဂမ်းပျက်ဂမ်းလျှောရောဂါဆိုသည်မှာရုတ်တရက်ဂမ်းသွားကြိမ် များပြီး ဂမ်းပျော့ပျော့သွားခြင်း

□ ၃. ဂမ်းပျက်ဂမ်းလျှောရောဂါဆိုသည်မှာရုတ်တရက်ဂမ်းသွားကြိမ် များပြီး ဂမ်းမာမာသွားခြင်း

□ ၄. ဂမ်းပျက်ဂမ်းလျှောရောဂါတွင် ဂမ်းပုံစံနှင့်ဂမ်းသွားကြိမ်ပြောင်းလဲခြင်းမရှိ

၁၅. ကလေးဘဝ ဂမ်းလျှောခြင်း၏ ဆိုးရွားသောနောက်ဆက်တွဲ ဆိုးကျိုးကိုဖော်ပြပါ။

□ ၁. ကျယ်လောင်စွာငိုခြင်း

□ ၂. အစားအစာကောင်းစွာမစားခြင်း

□ ၃. ခန္ဓာကိုယ်မှရေဆုံးရှုံးခြင်း

□ ၄. သာမန်ထက်ပို၍ဆော့ကစားခြင်း

၁၆. ရေဓါတ်ဆုံးရှုံးခြင်းကြောင့် ကလေးကို မည်သို့ဖြစ်စေနိုင်သနည်း။

□ ၁. ကလေးကိုငိုစေသည်

□ ၂. ကလေးကိုသေစေသည်

□ ၃. ကလေးကိုအစာများစွာစားစေနိုင်သည်

□ ၄. ကလေးကိုပို၍ဆော့စေသည်

၁၇. အကယ်၍ကလေးသည်ရေမသောက်ချင်လျှင်(သို့)အလွန်အမင်းရေငတ်နေလျှင် မည်သို့လုပ်သင့်သနည်း။

□ ၁. ဆွမျိုးများထံမှအကူအညီ ချက်ခြင်းယူသင့်သည်

□ ၂. ကော်ဖီတခွက် ချက်ခြင်း ပေးသင့်သည်

□ ၃. လေ့ကျင့်ထားသော ကျန်းမာရေး ဂန်ထမ်းထံမှအကူအညီချက်ခြင်းယူသင့်

□ ၄. အစားအသောက်များ ချက်ခြင်း ပေးသင့်သည်

၁၈. မည်သို့သော အချိန်၌ ကလေးတွင် အသက် အန္တရာယ်ရှိ သနည်း။

□ ၁. ကလေးရုတ်တရက် ဂမ်းသွားရပ်သွားလျှင်

□ ၂. ကလေး၏ဂမ်းထဲတွင် သွေးပါလျှင်

□ ၃. ကလေး ကစားလျှင်

□ ၄. ကလေး လန်းဆန်းနေလျှင်

၁၉. ဂမ်းပျက်ဂမ်းလျှာ ရောဂါ ကိုကာကွယ်ရန် မည်သို့လုပ်ရမည်နည်း။

□ ၁. ကလေးကိုအစာမကျွေးမီ နှင့် သင်ဂမ်းသွားပြီးနောက်သင်၏လက်နှစ်ဖက် ကိုဆပ်ပြာဖြင့်ဆေး ကြော သင့်သည်

□ ၂. ကလေးကိုအစာမကျွေးမီ နှင့် သင်ဂမ်းသွားပြီးနောက်သင်၏ လက်နှစ်ဖက် ကိုဆပ်ပြာဖြင့် မဆေး ကြော သင့်သည်

□ ၃. သင်၏ လက်နှစ်ဖက် ကို မသန့်ရှင်းသော အရာများကိုကိုင်တွယ်ပြီးမှသာ ဆေးကြော သင့်သည်

□ ၄. သင်၏ လက်နှစ်ဖက် ကိုအိမ်သာသွားပြီးသောမှသာ ဆေးကြော သင့်သည်

၂၀. သင့်ကလေး၏ လက်ကို မည်သို့ဆေးကြောရမည် ကိုသင်သိပါ သလား။

□ ၁. ရေကိုအသုံးပြု၍ တခါတရံဆေးကြောခြင်း

□ ၂. ရေနှင့်ဆပ်ပြာကိုအသုံးပြု၍ မကြာခဏဆေးကြောခြင်း

□ ၃. ရေနှင့်ဆပ်ပြာကိုအသုံးပြု၍ တခါတရံဆေးကြောခြင်း

□ ၄. ရေကိုအသုံးပြု၍ မကြာခဏ ဆေးကြောခြင်း

၂၁. ကလေးကို အစာမကျွေးမီ မည်ကဲ့သို့ ပြင်ဆင်ရမည်နည်း။

□ ၁. အစားအစာကို သေချာစွာ ချက်ပြုတ်သင့်သည်

□ ၂. အစားအစာကို ဖုံးအုပ်ထားခြင်း မရှိဘဲအချိန်အနည်းငယ် ထားသင့်သည်

□ ၃. အစားအစာကို အချိန်အတန်ကြာ သိုမှီးထားသင့်သည်

□ ၄. အစားအစာကို လျင်မြန်စွာ ချက်ပြုတ်သင့်သည်

၂၂. ဂမ်းပျက်ဂမ်းလျှာ ရောဂါကို ကာကွယ်ရန် အညစ်အကြေး များကို မည်သို့ စွန့်ပစ်ရမည်နည်း။

□ ၁. အညစ်အကြေးအားလုံးကို အိမ်သာတွင်(သို့) သန့်စင်ခန်းတွင်(သို့) မြေကြီးတွင် မြုပ်နှံခြင်းဖြင့် စွန့်ပစ်သင့်သည်

□ ၂. အညစ်အကြေးအားလုံးကို မြေကြီးပေါ်တွင် စွန့်ပစ်သင့်သည်

□ ၃. အညစ်အကြေးအားလုံးကို ရေထဲတွင် စွန့်ပစ်သင့်သည်

□ ၄. အညစ်အကြေးအားလုံးကို ကျန်းမာရေးနှင့် မညီညွတ်စွာ စွန့်ပစ်သင့်သည်

၂၃. အောက်ဖော်ပြပါ မည်သည့်အချက်က ဂမ်းရောဂါကို မပြန့်ပွား စေနိုင်သနည်း။

□ ၁. မသန့်ရှင်းသော အိမ်သုံးသောက်ရေ

□ ၂. မသန့်ရှင်းသော အစားအစာ ပြုပြင်သောနေရာ

□ ၃. ဆေးကြောခြင်း မရှိသော ကလေးများ၏လက်

□ ၄. သန့်ရှင်းသော အသုံးအဆောင် ပစ္စည်းများ

၂၄. အောက်ဖော်ပြပါ မည်သည့်အချက်က ဂမ်းရောဂါကို ကာကွယ်ရန်မှန်ကန်ပါသနည်း။

□ ၁. ကလေးများအား မသန့်ရှင်းသော အစားအစာ ပေးခြင်းကိုလက်ခံနိုင်သည်

□ ၂. ကလေးများအတွက်အစားအစာ နှင့်ရေကို ယင်ကောင်းများမှ ကာကွယ်ရန် ဖုံးအုပ် ထားသင့်သည်

□ ၃. ကလေးများအတွက်သောက်ရေကို မကျိုချက်သင့်ပါ

□ ၄. ကလေးများအတွက် အစားအစာကို ကောင်းစွာမချက်ပြုတ်သင့်ပါ

၂၅. သောက်သုံးရန် ဓာတ်ဆားကို မည်သို့ပြုလုပ်သင့်သနည်း။

□ ၁. ဓာတ်ဆားကို ရေအနည်းငယ်ဖြင့်သာ ရောသင့်သည်

□ ၂. ဓာတ်ဆားကို မည်သည့်ရေနှင့်မျှ မရောစပ်ဘဲ သုံးသင့်သည်

□ ၃. ဓာတ်ဆားကို ဘုံဘိုင်ရေဖြင့် ရောသင့်သည်

□ ၄. ဓာတ်ဆားကို တိကျသော ရေပမာဏဖြင့် ရောသင့်သည်

၂၆. အကယ်၍ ကလေးဂမ်းသွားနေလျှင် မိခင်နို့ကိုအကြိမ်ရေ မည်မျှတိုက်သင့်သနည်း။

□ ၁. ပုံမန်ထက် မကြာခဏ

□ ၂. ပုံမန်ကဲ့သို့

□ ၃. ပုံမန်ထက်လျှော့

□ ၄. မိခင်နို့ မတိုက်သင့်

၂၇. ဝမ်းလျှောနေသော ကလေးကို ကျန်းမာရေးဝန်ထမ်းဆီသို့ မည်သည့် အချိန်တွင် သွားပြ ရမည်နည်း။

□ ၁. ကလေးသည် လန်းလန်းဆန်းဆန်း ရှိလျှင်

□ ၂. ကလေးသည် တခါတရံ ငိုလျှင်

□ ၃. ကလေးသည် ရေမသောက်လျှင်(သို့)အလွန်အမင်းရေငတ်နေလျှင်

□ ၄. ကလေးဝမ်းသွားသောအကြိမ်လျှော့နည်းလာလျှင်

၂၈. ဝမ်းလျှောနေသော ကလေးကို ဓာတ်ဆားရေ မည်မျှပေးသင့်သနည်း။

□ ၁. တစ်ရက်လျှင် ဓာတ်ဆားရေ တစ်လီတာမျှသာ

□ ၂. တစ်ရက်လျှင် ဓာတ်ဆားရေ လီတာဝက်

□ ၃. တစ်ရက်လျှင် များနိုင်သမျှ

□ ၄. တစ်ရက်လျှင် သောက်ရေ တစ်ခွက်ထက် မပိုဘဲ

အပိုင်း ၃ ဝမ်းလျှောရောဂါ နှင့်ပတ်သက်သော အသိအမြင်

အောက်ပါအကွက်များတွင် မေးခွန်းတစ်ခုအတွက် တစ်ကွက်သာ ဖြေကြားသူ၏ အဖြေများကို ခြစ်ပါ။

စဉ်	အကြောင်းအရာ	သဘော တူ	ကြား: နေ	သဘော မတူ
၂၉.	အသက်ငါးနှစ်အောက်ကလေးများတွင်အရွယ်ရောက်ပြီး သူများထက်ပိုချုပြင်းထန်သောဝမ်းလျှောရောဂါဖြစ်ပွားနိုင်သည်			
၃၀.	အသက်ငါးနှစ်အောက်ကလေးများတွင်ဝမ်းလျှောရောဂါသည် အန္တရာယ် မရှိပါ			

အပိုင်း ၃ ဂမ်းလျှောရောဂါ နှင့်ပတ်သက်သော အသိအမြင် (အဆက်)

အောက်ပါအကွက်များတွင် မေးခွန်းတစ်ခုအတွက် တစ်ကွက်သာ ဖြေကြားသူ၏ အဖြေများကို ခြစ်ပါ။

စဉ်	အကြောင်းအရာ	သဘော တူ	ကြား: နေ	သဘော မတူ
၃၁.	အသက်ငါးနှစ်အောက်ကလေးများတွင်ဘေးကင်းသော သောက်ရေသောက်လျှင်ဂမ်းလျှောရောဂါ ပို၍ဖြစ်နိုင်သည်			
၃၂.	အသက်ငါးနှစ်အောက်ကလေးများတွင် သန့်ရှင်းသော အစားအစာမစားလျှင် ဂမ်းလျှောရောဂါ ဖြစ်ပွားနိုင်ခြေ ရှိသည်			
၃၃.	အသက်ငါးနှစ်အောက်ကလေးများသည်ဂမ်းလျှောရောဂါ ဖြင့် လျင်မြန်စွာသေဆုံးခြင်းမရှိ			
၃၄.	အသက်ငါးနှစ်အောက်ကလေးများသည် ဂမ်းလျှောရောဂါကြောင့် အာဟာရချို့တဲ့ခြင်းမဖြစ်နိုင်			
၃၅.	အသက်ငါးနှစ်အောက်ကလေးများသည်ဂမ်းလျှောရောဂါ သည် ကြီးထွားခြင်းကိုနှေးကွေးစေသည်			
၃၆.	ဂမ်းလျှောနေသောကလေးသည်အခြားရောဂါများ ဖြစ်ပွားခြင်းမရှိ			
၃၇.	ဂမ်းလျှောရောဂါသည် ကုသ၍မရနိုင်			
၃၈.	ဂမ်းလျှောရောဂါသည်ကာကွယ်၍ရနိုင်သည်ဟုသင် ထင်ပါသလား			
၃၉.	လက်ကိုဆပ်ပြာဖြင့်ဆေးကြောခြင်း၊ဘေးကင်းသော သောက်ရေသုံးခြင်း၊အညစ်အကြေးများကိုလုံခြုံစွာစွန့်ပစ် ခြင်း၊အစားအသောက်များကိုဖုံးအုပ်ထား ခြင်းသည်ဂမ်းလျှောရောဂါကူးစက်ခြင်းကိုလျှော့ချ နိုင်သည်ဟု သင်ထင်ပါသလား			

အပိုင်း ၃ ဂမ်းလျှောရောဂါ နှင့်ပတ်သက်သော အသိအမြင် (အဆက်)

အောက်ပါအကွက်များတွင် မေးခွန်းတစ်ခုအတွက် တစ်ကွက်သာ ဖြေကြားသူ၏ အဖြေများကို ခြစ်ပါ။

စဉ်	အကြောင်းအရာ	သဘော တူ	ကြား: နေ	သဘော မတူ
၄၀.	အညစ်အကြေးများကိုလုံခြုံစွာစွန့်ပစ်ခြင်း၊အစားအသောက် များကို ဖုံးအုပ်ထားခြင်း၊ အစားအသောက်ထည့်စရာများအား သန့်စင်ခြင်း သည် ဂမ်းလျှောရောဂါ ကူးစက်ခြင်းကိုလျှော့ချနိုင်သည်ဟု သင်ထင်ပါသလား			
၄၁.	အစားအသောက်များကိုဖုံးအုပ်ထားခြင်း၊အစားအသောက်ထည့်စရာများအားသန့်စင်ခြင်းသည်ဂမ်းလျှောရောဂါ ကာကွယ်ရန် အကျိုးရှိသည်ဟု သင်ထင်ပါသလား			
၄၂.	လက်ကိုဆပ်ပြာဖြင့်ဆေးကြောခြင်း၊ဘေးကင်းသောသောက်ရေသုံးခြင်း၊အညစ်အကြေးများကိုလုံခြုံစွာစွန့်ပစ်ခြင်း၊အစားအသောက်များကိုဖုံးအုပ်ထားခြင်းသည် ဂမ်းလျှောရောဂါ ကာကွယ်ရန် အကျိုးမရှိဟု သင်ထင်ပါသလား			
၄၃.	ဂမ်းလျှောရောဂါ ကာကွယ်ခြင်းသည်အခြားဆိုးကျိုးများရှိသည်ဟု သင်ထင်ပါသလား။ ဥပမာ- အချိန်နှင့်ငွေအလဟသဖြစ်ခြင်း၊ ဆပ်ပြာသည်အရောင်းကာ အန္တရာယ် ဖြစ်စေနိုင်ခြင်း စသည်ဖြင့်			

အပိုင်း ၄ အမှုအကျင့် နှင့်ပတ်သက်သော အကြောင်းအရာများ

အောက်ပါအကွက်များတွင် မေးခွန်းတစ်ခုအတွက် တစ်ကွက်သာ ဖြေကြားသူ၏ အဖြေများကို ခြစ်ပါ။

၄၄. အကယ်၍ သင်သည် ဂမ်းလျှောဂါနှင့် ပတ်သက်သော နောက်ဆုံးရ သတင်း အချက်အလက်များကို ယူချင်လျှင်မည်သို့ယူချင်သနည်း ။

□ ၁. တီဗီမှ

□ ၂. လက်ကမ်းစာစောင်မှ

□ ၃. အခြား(တိကြစွာဖော်ပြရန်) _____

၄၅. ဂမ်းလျှောဂါ ကာကွယ်မှုအကြောင်းကို မည်သူကသင့်ကိုပြောပြသနည်း

□ ၁. ထိုင်းကျန်းမာရေးဂန်ထမ်းများ (ဆရာဂန်, သူနာပြု, သာ:ဖွာ:ဆရာမ, ပြည်သူ.ကျန်းမာရေးဂန်ထမ်း,..... စသည်ဖြင့်)

□ ၂. မြန်မာစေတနာ့ဂန်ထမ်းများ

□ ၃. ဆွေမျိုးများ

□ ၄. အိမ်နီးချင်းများ

□ ၅. မိတ်ဆွေများ

□ ၆. အခြား(တိကြစွာဖော်ပြရန်) _____

အပိုင်း ၅ ဂမ်းလျှောရောဂါ ကာကွယ်မှုဆိုင်ရာ အမှုအကျင့်များ

အောက်ပါအကွက်များတွင် မေးခွန်းတစ်ခုအတွက် တစ်ကွက်သာ ဖြေကြားသူ၏ အဖြေများကို ခြစ်ပါ။

စဉ်	မေးခွန်း	အမြဲတမ်း	တခါတရံ	ဘယ်သောအခါမှ
၄၆.	သင့်ကလေးသောက်သုံးရန်အတွက်ကျိုချက်ထား သောရေ(သို့)ကလိုရင်း ခပ်ထားသောရေကိုအသုံး ပြု ပါသလား။			
၄၇.	သင့်ကလေး၏သောက်သုံးရေကို ယင်ကောင်၊ အမှိုက်များမဂင်ရန်ဖုံးအုပ်ထားပါသလား။			
၄၈.	သင်သည် အိမ်သာ(သို့) သန့်စင်ခန်းကို အသုံးပြုပါသလား။			
၄၉.	သင့်ကလေး၏အညစ်အကြေးများက အိမ်သာ(သို့) သန့်စင်ခန်း (သို့) မြေပဲနှံခြင်းဖြင့် စွန့်ပစ်ပါသလား။			
၅၀.	သင်၏လက်ကို ဂမ်းသွားပြီး သောအခါ ဆပ် ပြာ ဖြင့်ဆေးပါသလား။			
၅၁.	ကလေး၏အောက်ပိုင်းကိုသုတ်သင်ပြီးနောက် သင်၏လက်ကို ဆပ် ပြာ ဖြင့် ဆေးပါသလား။			
၅၂.	ကလေးကို အစာမကျွေးမီ သင်၏လက်ကို ဆပ် ပြာ ဖြင့် ဆေးပါသလား။			
၅၃.	အစားကိုမကိုင်တွယ်မီ(သို့)မစားမီ သင်၏ လက်ကို ဆပ် ပြာ ဖြင့် ဆေးကြောပါသလား။			
၅၄.	သင်သည်အစားများကိုယင်ကောင်အန္တရာယ်မှ ကာကွယ်ရန်ဖုံးအုပ်ထားပါသလား။			

အပိုင်း ၅ ဂမ်းလျှောရောဂါ ကာကွယ်မှုဆိုင်ရာ အမှုအကျင့်များ (အဆက်)

အောက်ပါအကွက်များတွင် မေးခွန်းတစ်ခုအတွက် တစ်ကွက်သာ ဖြေကြားသူ၏ အဖြေများကို ခြစ်ပါ။

စဉ်	မေးခွန်း	အမြဲတမ်း	တခါတရံ	ဘယ်သောအခါမှ
၅၅.	သင်သည်အစားအသောက်ထည့်စရာများကိုအသုံး ပြု ပြီးသောအခါဆေးကြောပါသလား။			
၅၆.	သင့်ကလေးကိုသန့်ရှင်းသောအစားအသောက်ထည့်စရာများနှင့်ကျွေးမွေးပါသလား။			
၅၇.	သင့်ကလေးကိုအစားအသောက်ကို ချက်ခြင်းပြင်ဆင် ပြီးကျွေးမွေး ပါသလား။			
၅၈.	သင့်ကလေးကိုအစားအသောက်ကျွေးမွေးရန် သန့်ရှင်း စွာ ပြင်ဆင် ပါသလား။			

BIOGRAPHY

NAME	Wei Yan Aung Htay
DATE OF BIRTH	22 February 1986
PLACE OF BIRTH	Yangon, Myanmar
INSTITUTION ATTENDED	University of Medicine (2) Yangon, Myanmar, 2002 – 2008 Bachelor of Medicine and Bachelor of Surgery ASEAN Institute for Health Development, Mahidol University, Thailand, 2009 – 2010 Master of Primary Health Care Management
PRESENT POSITION	Medical Doctor
HOME ADDRESS	No. 24, Wutkyaung Street, Pazundaung Township, Yangon, Myanmar. Tel. + (95) 1 298276 E-mail: dr.weiyan@gmail.com