HEALTH SERVICES UTILIZATION AMONG MOTHERS OF CHILDREN UNDER 5 YEARS OLD IN MUANG DISTRICT OF SAKAEO PROVINCE, THAILAND

PHUNG QUANG VINH

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 2006

ISBN 974-04-6912-4

Thesis
entitled

HEALTH SERVICES UTILIZATION AMONG MOTHERS OF CHILDREN UNDER 5 YEARS OLD IN MUANG DISTRICT OF SAKAEO PROVINCE, THAILAND

.....
Mr. Phung Quang Vinh
Candidate

.....
Prof. Santhat Sermsri
Ph.D.
Major-Advisor

.....
Asst. Prof. Jiraporn Chompikul
Ph.D.
Co-Advisor

.....
Prof. M.R. Jisnuson Svasti
Ph.D.
Dean
Faculty of Graduate Studies

.....
Assoc. Prof. Sirikul Isaranurug
M.D., Dip. Thai Board of Pediatrics
Chair
Master of Primary Health Care Management
ASEAN Institute for Health Development

Thesis
entitled

HEALTH SERVICES UTILIZATION AMONG MOTHERS OF CHILDREN UNDER 5 YEARS OLD IN MUANG DISTRICT OF SAKAEO PROVINCE, THAILAND

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

on
March 16, 2006

.....
Mr. Phung Quang Vinh
Candidate

.....
Prof. Santhat Sermsri
Ph.D.
Chair

.....
Asst. Prof. Veena Sirisook
Dr.P.H.
Member

.....
Asst. Prof. Jiraporn Chompikul
Ph.D.
Member

.....
Prof. M.R. Jisnuson Svasti
Ph.D.
Dean
Faculty of Graduate Studies
Mahidol University

.....
Assoc. Prof. Sirikul Isaranurug
M.D., Dip. Thai Board of Pediatrics
Director
ASEAN Institute for Health Development
Mahidol University

ACKOWLEDGEMENTS

This thesis would not have been possible without the help and support of many people.

I would like to express my deepest gratitude to my major advisor, Professor Santhat Sermsri for his helpful suggestions and encouragement, and his continous special attention, which led to accomplish this study.

I am really grateful to my co-advisor, Asst. Prof. Jiraporn Chompikul for her invaluable guidance. My appreciation goes to my external committee, Asst. Prof. Veena Sirisook, for her helpful suggestions and comments.

I wish to express my special thank to VietNam Government, especially Director of The HoChiMinh Department of Health, Dr. Nguyen The Dung and Director of The Preventive Medicine Center HCMC, Dr. Le Thanh Hai for giving me the opportunities to attend M.P.H.M course at the ASEAN Institute for Health Development, Mahidol University, Thailand. My special word of thanks also goes to JICA/TICA for sponsoring my study over here.

I appreciate to all staff of AIHD and M.P.H.M office, ASEAN House.

Also my sincere thanks to Dr. Charun Boonyarithikarn, M.P.H.M Alumni who arrange the research team, and all the respondents in Muang District, Sakaeo Province, who were more than willing to cooperate and thus make this study complete.

Finally, I would like to express my special thanks to my parents, my elder sister family and my wife for their encouragement and support when I was in Thailand.

PHUNG QUANG VINH

HEALTH SERVICES UTILIZATION AMONG MOTHERS OF CHILDREN UNDER 5 YEARS OLD IN MUANG DISTRICT OF SAKAEO PROVINCE, THAILAND

PHUNG QUANG VINH 4837999 ADPM / M

M.P.H.M. (PRIMARY HEALTH CARE MANAGEMENT)

THESIS ADVISORS: SANTHAT SERMSRI, Ph.D., JIRAPORN CHOMPIKUL, Ph.D.

ABSTRACT

A cross-sectional study was conducted to investigate the health services utilization among mothers of children under 5 years old in the Muang district, Sakaeo province, Thailand. Socio-demographic characteristics, attitude toward public health service, knowledge toward general health services, accessibility of health services and the illness levels of the studied mother's children were all investigated.

Data were obtained from 272 mothers of children under 5 years old by interview and questionnaire. The mothers who lived at least one year in the village and whose children had had on illness in the past year were included in this study.

Approximately forty three percent of mothers were between 20-29 years of age. The main occupation (35.3 percent) was housewife. The education level of the majority of the respondents was primary school level (51.2 percent). Fifty five percent of the family had sufficient income for day to day living but not enough savings. Approximately seventy one percent of mothers had moderate attitude toward public health services. Sixty percent of respondents had a fair knowledge toward general health services. When the child's illness was mild, the majority of mothers who had a high attitude toward public health services went to government hospitals (37.8 percent) and those with low attitude bought drugs in drug stores (26.19 percent). The mothers with sufficient income for day to day living and having savings went to government hospitals (28.72 percent) as compared to those who were not sufficient income for day to day living who did self-treatment (37.04 percent). For mothers with poor knowledge toward general health services the percentage of those not using the public health service was higher than those who had fair or good knowledge, 23.81%, 6.71%, 7.58% respectively.

There were significant associations between the type of health services used and each of the following variables; main occupation, education, family composition, income of mother's family, distance from mother's house to health services, transportation and traveling time in case of child mild illness. In severe illness cases, two factors; distance from mother's house to health services and traveling time were associated with the kind of health services used. The mothers who were laborers tended to use public health service, 3.47 times as much as those who worked in agriculture.

It is suggested that there should be improvement in the information and management about public health services and also in the mother's attitudes and knowledge.

KEY WORDS: HEALTH SERVICES UTILIZATION / CHILD'S ILLNESS LEVEL

82 P. ISBN 974-04-6912-4

CONTENTS

CONTENTS (Cont.)

Page

LIST OF TABLES

TABLE Page

LIST OF TABLES (Cont.)

TABLES Page

LIST OF TABLES (Cont.)

TABLES Page

LIST OF FIGURE

FIGURE Page

LIST OF ABBREVIATIONS

TBAs : Traditional Birth Attendants

IEC : Information, Education and Communication

MCH/FP : Maternal and Child Health/ Family Planning

PHC : Primary Health Care

CHAPTER 1
INTRODUCTION

1.1 Rationale and justification of the study

The Alma-Ata Declaration aiming at health for all by the year 2000 proposes that basic preventive and curative health services should be made available to all the people of the world by the beginning of the next century. At present, many developing countries are far from achieving this goal because of a variety of constraints – such as severely limited budgets, shortages of supplies, unmet training needs, and lack of transportation – which limit the effective delivery of health services even to those who live in the immediate vicinity of health facilities. In many instances, a large proportion of the rural population in the developing world has no access to modern health services. (1)

In many country has found so many solutions to reform their health system in order to meet the goal of better health for all, increase efficiency, reduce health inequalities, protect individuals, families, communities from financial loss, and enhance fairness in the financing and delivery of health care to be consistent to the rapid changes in the society.

For decades, policymakers have promoted the integration of mental health services into primary care as a means to improve access, quality, and cost of care. These efforts have occurred in the context of a broader intellectual movement that regards service integration as a key to solve the problems of fragmentation, inaccessibility, discontinuity, and inefficiency that seem to plague the health and human services delivery systems in many American communities (2). Service provider interest in integration has waxed and waned over the years, in part responding to cycles of government and foundation support for projects featuring a service integration component. Despite this history, the concept of service integration

has never been well-defined. Furthermore, empirical studies examining the structural factors shaping integration, the organizational characteristics of integrated service providers, and the effects of integration on access, quality, and cost remain limited in number, scope, and generalizability. For these reasons, we regard service integration as a "policy ideal". An ill-defined concept which enjoys widespread acceptance and face validity in the absence of consistent evidence that it can fulfill many of the expectations attributed to it. (2)

Organizational theorists have developed a considerable body of literature relevant to the concept of service integration (3). This literature regards integration as encompassing a range of inter- and intra-organizational strategies aimed at increasing functional coordination with the intent of improving performance measures such as access, comprehensiveness, continuity, and/or cost-effectiveness. This study considers this to be a reasonable working definition, with the recognition that it provides considerable latitude regarding the actual characteristics of integration. Since integration can occur within, as well as between, organizations, the concept is applicable to a broader spectrum of arrangements than those discussed in the emerging health services networks literature (4). Integration can be viewed from the consumer level, focusing on continuity of care as an individual uses multiple services, or from the organizational level, focusing on efforts to bring different agencies or programs together (2). In this paper, we follow the second approach.

Although the framework this study describe is relevant to primary care and mental health services integration as a whole, our association with a rural health research center directs our principal interest toward the integration of mental health services with primary care in rural communities. In this context, policymakers regard integration as a solution to persistent problems of limited availability and accessibility (5). The prevalence of mental health problems in rural areas is roughly equal to that in urban and suburban communities, yet specialty mental health services are considerably more limited in rural counties, with many lacking them altogether (6). Physical distance, adverse weather conditions, and limited transportation options present considerable barriers to care even when resources are available (2). Some

rural residents are unwilling to use available mental health services because of the stigma associated with mental illness and concerns about confidentiality (5). Rural and urban alike, a significant proportion of people with mental health problems seek and obtain care for those problems from primary care practitioners (7). The fact that these same people also experience higher rates of morbidity and tend to use health care services more intensively than the general population lends further justification to the need for integrating primary care and mental health services (8).

The health service system in Thailand has evolved from self-reliance in the past, i.e. using local wisdom for curative care and health promotion, to the systems depending largely on modern medical and health services approaches. Under the new systems, various levels of health services were arranged, basically from self care at family level to advanced health services provided by health specialists. The "providers" and "recipients" were designated. The government sector is the main service provider, with increasing participatory roles of the private sector.

The increasing cost of health care in most of the nations in the world, including Thailand, make health-care services inaccessible to people, especially the poor. Thus, in Thailand, the government health-care policy has set forth for health-care reform that will provide universal coverage for all people of the country. In order to achieve this goal, primary care should be strengthened (9).

The 8th Plan (1997-2001) has identified major strategies addressing issues related to health behaviour, disease prevention and control, and health promotion. However, the MOPH is short of personnel with expertise in health education and public relations (10).

Table 1 Health Facilities in Thailand 2001

Types of health facilities	**Bangkok**	**Provincial**	**District**	**Sub-district**	**Village**	**Total**
Medical school hospitals	5	4	-	-	-	9

Table 1 Health Facilities in Thailand 2001.(cont.)

Types of health facilities	Bangkok	Provincial	District	Sub-district	Village	Total
Medical school hospitals	5	4	-	-	-	9
Specialized hospitals	19	41	-	-	-	60
Regional hospitals	-	25	-	-	-	25
General hospitals						
- Public	29	67	-	-	-	96
- Private	117	319	-	-	-	436
Community hospitals/ extended hospitals	2	-	720	-	-	722
Health centers/ branches (BMA's)	143	-	214	-	-	357
Private clinics	3,081	11,322	-	-	-	14,403
Health centers	-	-	-	9,738	-	9,738
Community primary health care centers	-	-	-	-	72,192	72,192
All types of modern pharmacies	3,667	7,653	-	-	-	11,320
Traditional medicines pharmacies	409	1,581	-	-	-	1,990

(Source: Thailand Health profile 1999-2000 _ A summary Ministry of Public Health)

Since 2001, the new government has implemented the policy of universal health insurance or "30 baht inclusive health care". The budgetary system and administrative system are revised, followed by the overall structural reform of Ministry of Public Health. The new system focuses on the efficiency, quality, and equity of health services, including the decentralization of various types of health agencies to become self administered, while reducing central command and facilitating rapid service provision.

In Thailand, the infant mortality rate (IMR) appears to be significantly underreported at 21.5 per 1000 live births (2001). A more realistic estimate would be

around 25. The MMR also appears to be grossly underreported. Of the communicable diseases, pneumonia is the leading cause of death in children under five years with 16.72 deaths per 100,000 in 1994. Overall, acute diarrhoea is an important cause of mortality, with 1.56 deaths per 100,000 children under five years (11). In "Study on factors affecting the use of oral rehydration therapy by mothers in diarrhoeal disease of under five years children in Kanchanaburi provincial hospital, Thailand" of Saieef Uddin Yeahia (MPHM 1998) found significant association mothers' belief on diarrhoea and distance of health center (12).

This study describe a survey technique which focuses on health services utilization of mothers of children under 5 years old in rural area. This study also brings local health workers into direct contact with the community, thereby increasing the awareness of community health needs and providing direct motivation to improve the services in the local communities. This study focuses on the mothers of children aged under 5 years because:

- Children under 5 years old are the age group who frequently has the illness.
- Many health programs are applied for this age group.
- The result of this study influence on health services utilization of two groups: mother and children.

1.2 Research Questions

What kinds of health services including public and private health care do mothers of children under 5 years old utilize at community and what are the factors related to the use of this health service?

1.3 Research Objectives

1.3.1 General objective

To identify types of health services among mothers of children under 5 years old in Muang District of Sakaeo Province.

1.3.2 Specific objectives

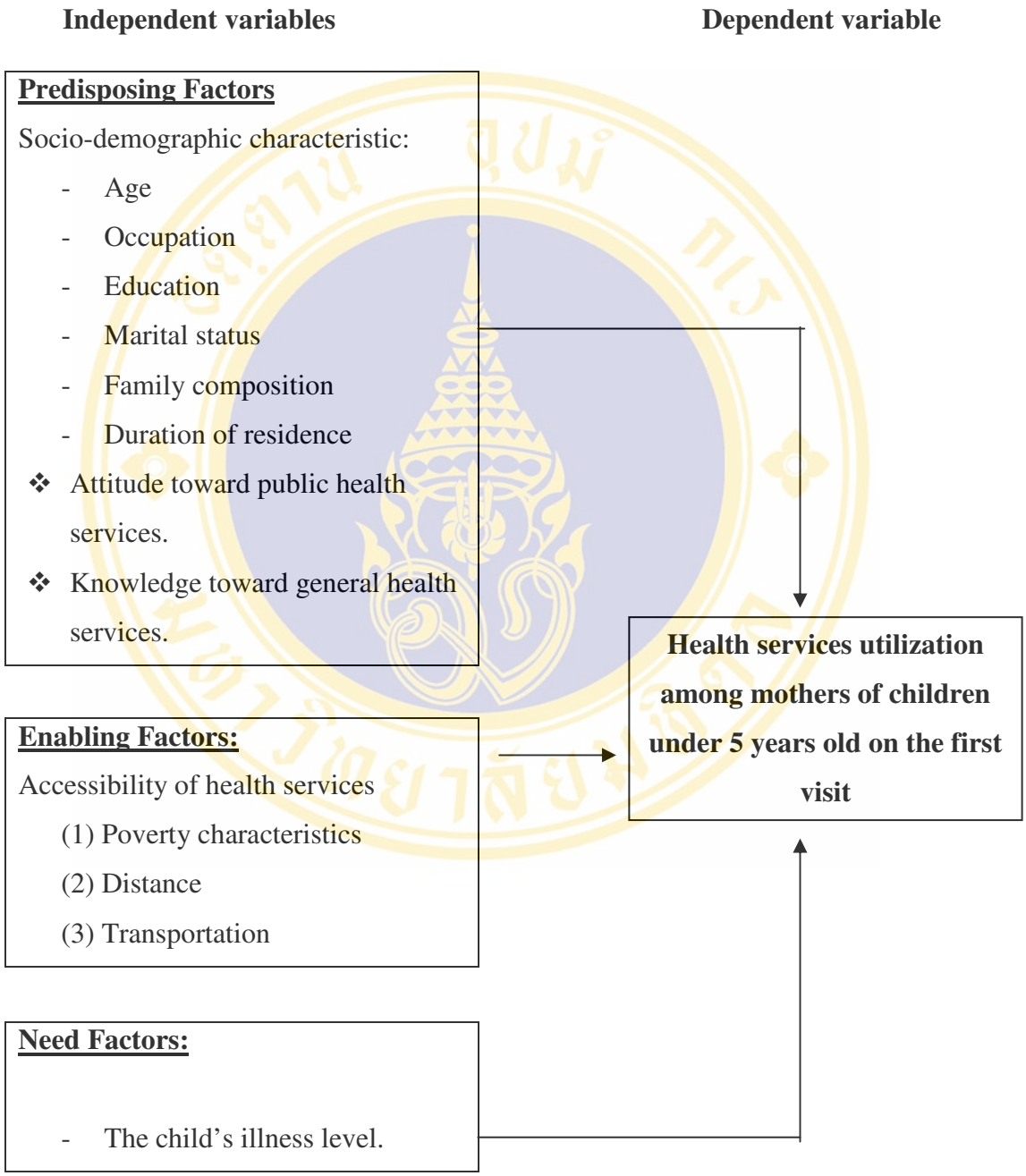
1. To examine the health service utilization among mothers with children aging under 5 years old.

2. To investigate the association between attitude toward public health service and types of health service among mothers with children aging under 5 years old at community.

3. To examine the association between the knowledge on health service use and the use of health service among mothers with children aging under 5 years old at community.

4. To determine the influence among the selected factors ie, predisposing and enabling relate to the types/ kinds of health services at community from mothers whose children aging under 5 years with disease.

1.4 Conceptual Framework of Study



1.5 Operational Definition

1.5.1 Use of health service

The use of health care service in this research refers to the curative purposes of mothers when the childs get sick where they choose the kind of health service. The use also includes a priority of place that mothers choose for first action of the last illness episode and the following steps.

1.5.2 Predisposing factors

Socio-demographic characteristics

Socio-demographic characteristics refer to age, occupation, education, marital status, family composition and duration of residence who are respondents of this study.

Age refers to real age of mothers at time of the interview.

Occupation refers to present occupation or the job of the respondents in the family, which is categorized into agriculture, laborer, housewife, private employee and government employee, own business and other occupations.

Education refers to the highest level of educational obtainment which includes no education, primary school, secondary school/ high school, vocation, diploma, bachelor, master and others.

Marital status refers married, windowed or divorced.

Family composition refers a type of extended family unit.

Attitude toward public health services:

Attitudes of the respondents toward public health services according to beliefs and affections about the efficiency of treatment, health personnel, quality of drug, opening hours.

1.5.3 Enabling factors

The enabling factors in this study include accessibility of health services. Which is measured by poverty characteristics, distance and transportation.

Poverty characteristics refers a composition of three factors, i.e., income earned, type of residence and individual perception of one's economic status to one's neighbor.

Distance refers to the way from house to place for health care.

Transportation refers to the advantage of mothers going from house to place for health care.

1.5.4 Need factors

The child's illness level refers to the respondent's perception of the child's overall health (excellent, very good/good, fair/poor).

1.6 Limitation of Study

1. This study is specific only the utilization of health services among mothers having children under 5 years old in Muang District, Sakaeo Province. So, those results are not generalized whole mothers in Thailand.

2. The answer of the mothers who were not in house at the interviewer came was not included in this study.

CHAPTER 2
LITERATURE REVIEW

2.1 General Overview

The Asia and Pacific region is home to 690 million people living on incomes of less than $1 per day, more than two thirds of the world's poor (13). The WHO emphasizes the many dimensions of poverty and explicitly recognizes that health interventions can reduce poverty. Most poor people live in areas where health services are poor or nonexistent. Poverty leads to poor nutrition and inadequate access to health care, which cause health to deteriorate, which in turn prevents the poor from being productive members of the workforce (14). This is a vicious cycle of impoverishment. Health is also a key input to economic development, because good health enhances the productivity of the workforce and increases the attractiveness of the economy for investors, both domestic and foreign (15). Such diseases as malaria, tuberculosis, acquired immunodeficiency disease syndrome; and emerging diseases, such as severe acute respiratory syndrome and avian influenza can increase human suffering and have significant economic costs. Developing countries continue to endure high rates of avoidable illness and premature death. Inequalities in health status and access to health care are pervasive and growing, both among and within countries (13). While technical interventions to prevent and treat the majority of health conditions in these countries are known, the challenge is ensuring access to them.

Overall, according to the Thailand Health profile 2001-2004 the illness of children under 5 years old is still the public health problem (16)

2.1.1 Mortality Rate of Children

The child mortality rate (among children aged under 5 years per 1,000 live births) has not significantly changed from 12.8 in 1990 to 12.0 in 2003. It is

noteworthy that during the first stage of the economic crisis the rate rose to 16.7 in 1998 and has had a tendency to drop since 1999. It is also noted that the rate reported by the civil registration office tends to be lower than reality, whereas the rate of 31.4 was derived from the 1996 population change survey.

2.1.2 Diarrhea

Acute diarrhea is still a crucial public health problem with a relatively slight change in incidence among both children and adults, particularly among children under five years of age whose incidence is higher than that in adults. A recent provincial health status survey revealed that the diarrhea incidence in children has been declining over the past five years from 6.0 episodes/person/year in 1995 to 3.6 episodes/person/year in 2001. Nevertheless, the incidence is still higher than the target of not exceeding 1 episode/ person/year. However, the mortality rate has been declining considerably due to improved health services and extensive coverage as well as the success of the campaign on oral rehydration therapy (ORT).

Table 2 Episodes of Illness with Diarrhoea among Children under 5 years of age, 1995-2001

Illness (episodes/ person/ year)				
Type of areas	1995	1996	2001	Target, 8th Plan
Municipality	4.9	3.1	3.4	
Non-municipality	5.2	3.4	3.9	
Total	6.0	3.4	3.6	Not exceeding 1

(Source: Provincial Health Status Surveys, 1995,1996 and 2001)

2.1.3 Acute Respiratory Infection among Children

Currently acute respiratory infection is still a crucial public health problem in Thailand. **Pneumonia is the number one cause of death, among all infectious diseases, in children under five.** The incidence of pneumonia in children has fallen

from 5.2% in 1995 to 1.33% in 2003; and its mortality rate (per 100,000 population) has steadily dropped from 15.1 in 1990 to 1.77 in 2003.

The health situation in Thailand has fared very well compared to other countries at a similar social and economic level (17). This is largely due to the application of the former notion of public health which involves sanitation, immunization, nutrition supplement and infectious disease control. Over the years, Thailand has modified the nature of public health. Many interventions have been added to the traditional public health measures, including population control (e.g. family planning), greater concern for mother and child health, community medicine, the concept of health for all, community participation, primary health care and the promotion of self-care. These added measures have continued to improve the public health situation throughout the country, since over half of the population still lives in areas where traditional and added public health approaches are still very important. Decision-making and management authority has been decentralized to the community level. The Tambon Administrative Organizations are responsible for disease prevention and the basic health services provision (17).

2.2 The health services utilization in Thailand

Since 1970, the utilization of public health facilities is increasing from 11.1% up to more than 30% in 2001 respectively. Utilization of private hospitals or clinics are much higher in urban than rural. Semsri explained that government health care is only one of the resources available for treatment among the rural population (18).

Table 3 Percentage of health care utilization in Thailand, classified by urban and rural areas

	1970	1991		2001	
Sources of health care	**Both**	**Urban**	**Rural**	**Urban**	**Rural**
Do nothing	2.7	17.9	15.6	4.4	5.8

Table 3 Percentage of health care utilization in Thailand, classified by urban and rural areas (cont.)

	1970	1991		2001	
Sources of health care	**Both**	**Urban**	**Rural**	**Urban**	**Rural**
Traditional care or others	7.7	4.7	5.8	2.1	2.6
Self-medication	51.4	36.9	38.6	29.4	22.1
Health centers	4.4	2.7	17.0	5.5	22.3
Public hospitals	11.1	13.1	12.8	33.9	35.2
Private clinics/hospitals	22.7	24.7	10.2	24.0	11.4

(Source: Thailand health profile 1999-2001)

Thais can switch health care services until they are satisfied with the result of treatment. If those source where they chose does not give expected outcome within one or two days, it is usual for patients to seek health care from another. In choosing the best source of medical care, people will consider how much money and time free they have (22).

2.3 Utilization of health service in rural area

Bernan (1986) reviewed documents about Service Use and Asian Rural Health System Performance pointed out that the average per capita annual contact with medical care is often less than two in Asia and below one in some countries. This is well below rates reported in other parts of the world (19).

In Thailand, the utilization of various health services changes over time and place (21). Semsri, S. and Riley's study (1974) found that monetary cost was an important barrier in choosing a source of care, that is the cost of treatment using western drugs is much more than traditional drugs such as herbs (20). The data source of the Thai Ministry of Health (1976) showed that the factors which influenced health services utilization were distance, reputation of health service units and competition

of source services and the attitudes of health personnel. The population size and density also have affected the pattern of health service utilization.

Surveys of the MOPH and Institute for Population and Social Research, Mahidol University from 1970-1985 show the increasing trend of health center utilization from 4.4% 1970 to 16.8% in 1979 and 14.7% in 1985 (23).

In 1980, A Psychosocial Aspect of Rural Health Service in the North East Region of Thailand survey showed that 60% of the villages have used midwife service in the past 12 months and more than 40% have never such services. The latter category is also divided into 2 groups, those who have never used before 28.5% and those who have use more than 12 months ago 11.9%. In 1995, A study of Pham Le Tuan of Patterns of health service utilization of villagers in rural areas in Chantaburi Province found great numbers of people coming to commune health center to seek health care when they get sick (24). In 2005, A study of Daovilay Banchongphanith of Utilization of health center service among the villagers in rural area in Khonkaen Province found 32.3% villagers who never used health center services; 94.9% villagers can afford for their illness at the private clinic or hospital (25).

2.4 Health care service infrastructure in Thailand

Number and coverage of health facilities

At village level, in 1998, of all 68,881 villages around the country, 97.8 percent has community primary health care centers, which can be broken down into 415 community health posts, 67,376 rural community primary health care centers and 1,732 urban community primary health care centers (28).

At district level, there are 712 community hospitals, covering 89.6 percent of all district, one extended outpatient departments, and 212 municipal health centers.

At provincial and regional levels, there are 67 general hospitals 25 regional hospitals, 38 specialized hospitals, 56 military hospitals and 4 medical school hospitals. In Bangkok, there are 5 medical school hospitals, 29 general hospitals, 19 specialized institution, 3 ten-bed community hospitals and 60 public health centers.

Overall, the total number of hospitals around the country in 1997 was 943 units with 102,460 beds. Bangkok had 40 hospitals with 17,485 beds. The central region had 246 hospitals with 28,361 beds. The northern region had 202 hospitals with 20,321 beds. The southern region had 160 hospitals with 13,565 beds. The northeastern region had 295 hospitals with 22,728 beds. In addition, there are health facilities in the private sector, which include drugstores (5,351 units), clinics (12,206 units) and hospitals (473 units)

Distribution of health facilities

- Hospitals: - The bed to population ratio had risen in the past decade from 1:752 in 1979 to 1:457 in 1997. The northeastern region had the ratio of 1:813, which was almost twice lower than those of the other regions and 4 times lower than Bangkok's. Although most of the hospital beds are clustered in Bangkok (1:205) and the central region (1:374), the Bangkok-regional disparities have markedly lessened. As the numbers of hospitals and beds have been increasing since 1993 and the number of doctors has increased slightly, the doctor to bed ratio dropped from 1:7.5 in 1991 to 1:14.6 in 1999.
- Health centers: - The trends of health center to population ratio have been rising in all regions nationwide. The ratio has been increasing from 1:10,064 in 1979 to 1:4,172 in 1998. The numbers of health centers in each region were 2508 units for the Central, 2,203 units for the North, 1,505 units for the South, and 3,398 units for the Northeast. However, based on the ratio of center to population, which was 1:3,554 for the Central, 1:4070 for the North, 1:3,657 for the South and 1:4923 for the Northeast, regional disparities were not markedly differences (26).

The Thai health care system is pluralistic and dominated by the public sector, particularly in the rural areas, where more than two third of the people live. In 2003, there were 9,765 rural health centers cover all sub-districts; 725 community hospitals (10-120 beds) cover 91.2% of districts; 74 general hospitals; 25 regional hospitals; 57 military hospitals; 60 specialized hospitals; and 10 medical school hospitals. Totally, these public facilities provide 99,590 beds. For the private sector, there were 346

private hospitals providing 34,863 beds, accounted for 25.9% of total beds in the country. In addition, there are 14,935 private clinics, mainly in the urban cities (29).

The health service systems have evolved from self-reliance using local wisdom for curative care and health promotion to the systems that depend on modern medical and health service approaches. The public sector is the main service providers.

The health care service infrastructure in Thailand is classified into 5 levels in corresponding to the level of care provided (Figure 1).

2.4.1 Self-Care Level

Services at this level include the enhancement of Care Level-Self. Thai .care and make decisions about health-s capacity to provide self people alcohol ,people trend to realize more about their health such as reducing smoking care approach is-self. However physical activity and perform, consumption lessening due to greater utilization of public and private health facilities. This effort is to supplement the primary health care services.

2.4.2 Primary Health Care level

The primary health care services include those organized by the community in providing services related to health promotion, disease prevention curative care and rehabilitative care, using medical and health technologies that are appropriate to community ' s need and culture. The medical and health technologies applied at this level are generally in response to the community's needs and culture. Service providers are those people in the area, VHVs or other non-government volunteers. Clearly, the services provided are closes to self care and primary care service provision.

2.4.3 Primary Care level

This level of care provided by health personnel and general practitioner. The feature of Thai primary care system, in addition to provided in health centers and community hospitals is not identified exactly responsible areas as well as is not holistic care services for family level.

The universal coverage of health care policy of the present government aims to develop a holistic primary care system for all families across the country. In the near future, the entire holistic primary care system will be more effective and stronger. The components of the primary care system are as follows:

2.4.3.1 Community health Post A community health post is a village level health service unit established in remote areas, covering a population of 500 to 1,000 and staffed by just one community health worker (a MOPH permanent employee).

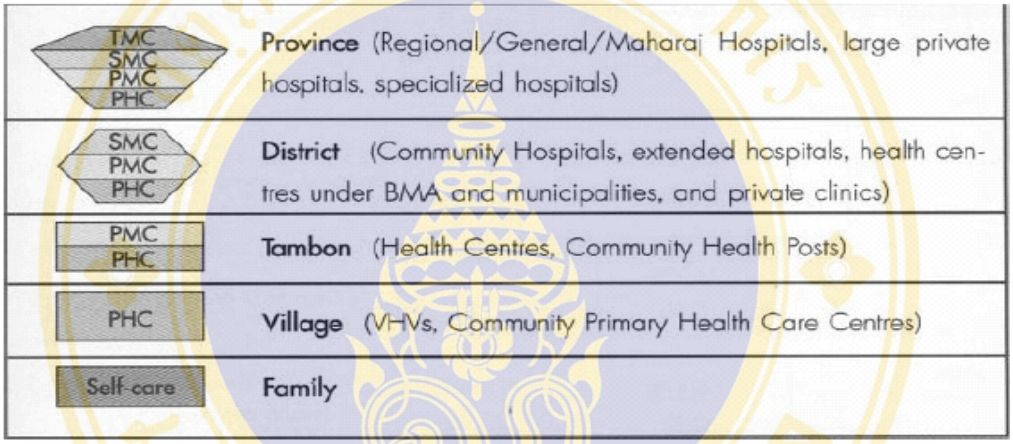


Figure 1 Levels of Health Services in Thailand

Services provided at this level include health promotion, disease prevention and simple curative care.

2.4.3.2 Health Centers A health center is a subdistrict (tambon) or village level health service unit - a first - line unit, covering a population of about 1,000 - 5,000, with health staff including a health worker, a midwife and a technical nurse. The MoPH is now in the process of assigning a dental nurse, a professional nurse, and a health specialist to each large health centre. Services provided at this level include health promotion, disease prevention, and curative care. Health centre staff run health programmes according to the standard operational procedures established by the MoPH, under the technical supervision and support of the community hospital.

Since 2002, under the universal coverage of health care scheme, Primary Care Unit (PCUs) have been established to provide basic or primary care to the people, with a linkage in a holistic manner as well as referral system with higher-level of health care facilities. At present, 5,946 PCUs have been upgraded from subdistrict health centres and another 953 PCUs transformed from other types of health facilities such as hospital-initiated community health service centres, municipal health centres or newly established PCUs.

2.4.3.3 Health centers of municipalities , outpatient departments of public and private hospitals at all levels , and private clinics At these facilities , out patient care is provided by doctor and other health professionals.

2.4.3.4 Drug Stores This is primary care level that provided by pharmacist or pharmaceutically-trained personnel.

2.4.4 Secondary Care level

Health care at this level is provided by medial and health personnel with various degrees of specialization. General and specialized facilities include the following:

2.4.4.1 Community Hospitals. A community hospital is located in a district or sub-district with 10 to 150 inpatient beds, covering a population of 10,000 or more. There are doctors and other health professionals. Generally, services provided are mostly curative care, compared to those at primary care facilities.

2.4.4.2 General or Regional Hospitals and Other Large Public Hospitals. A general hospital in this category is equipped with 200 to 500 beds, while a regional hospital has over 500 beds and medical specialists in all fields.

2.4.4.3 Private Hospital. Most hospitals are operated as a business entity with both full-time and part-time staff, and clients are required to pay for services.

2.4.5 Tertiary Care

Health services at this level are provided by medical and health professionals, mostly with specializing expertise. Tertiary Care facilities include:

2.4.5.1 Regional hospitals

2.4.5.2 General Hospitals

2.4.5.3 University Hospitals and public large hospitals belong to Ministry as Local Administrative Organization.

2.4.5.4 Large Private Hospitals have all fields of medical specialists. Most are over 100 beds private hospitals.

The classification of health facilities mentioned above is relatively through as a matter of fact that the secondary and the tertiary care facilities also provide primary care services. Health facilities are distributed to various agencies implementing health programs, including those in the public and private sectors.

Table 4 Classification of service supplied budget for health system (percent)

Activities	**5 th Public Health development planning**	**6 th Public Health development planning**	**7 th Public Health development planning**
Administration	6.65	7.31	5.50
Care & treatment	58.54	57.91	55.53
Health promotion	17.25	16.13	19.23
Prevention	10.12	10.97	11.76
Rehabilitation	0.24	10.26	0.33
Narcotic drug control	0.24	0.26	0.33
Personnel producing	3.62	2.93	2.96
Training	1.15	1.12	0.54
Primary health care	0.79	1.70	0.54
Protective consumer	0.89	0.87	0.95
Research &development	0.23	0.27	0.33
Total(million)	44,508.98	74,253.70	223,792.93

(MSH, Thailand Health Financing and Management Study Project : Health financing in Thailand May 1999,14)

From this table , it was shown that more budget was for curative while less one was for prevention and promotion.

2.5 Concepts and theories which implemented in this study

Andersen's Framework of Health Service Utilization

Andersen et al.(1983) considered an individual's access to and use of health services to be a function of three characteristics; the specific factors are unique for each type of service:

- **Predisposing Factors** - socio-cultural characteristics of individuals that exist prior to their illness. There are three dimensions:
    - Demographics **-** age, gender, marital status, and family size
    - Social structure - education, occupation, ethnicity, and makeup of family
    - Health beliefs - attitudes regarding medical care, medical practitioners, illness, or thoughts about one's state of health
- **Enabling Factors** - the logistical aspects of obtaining care, including family and community resources. There are two dimensions:
    - Economic ability to pay for care - measured by income and/or health insurance coverage
    - Community factors - geographic location and population density, which affect service availability.
- **Need Factors** -either a subjective acknowledgement of need (an individual's perception that the situation can benefit from professional help) or an objective professional recognition of need for service (i.e. diagnoses of functional and health problems). Needs are the most immediate cause of health service use.

CHAPTER 3
RESEARCH METHODOLOGY

3.1 Study design

This study attempts to find out the relationship between influencing factors and utilization of health services among mothers of children under 5 years old in Muang district, Sakaeo Province, Thailand. A cross-sectional design was used in this study.

3.2 Target population

The target population in this study was mothers having children under 5 years old in Muang district, Sakaeo Province, Thailand who lived in an area where government hospitals, health centers, private clinics and drug stores were located.

3.3 Sample size

The size of the studied mothers in this study was based on calculation from the following formula:

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

with:

- n = sample size
- Z = standard score at the level of 95% confidence interval of estimation, thus Z = 1.96
- P = anticipate proportion of health services utilization. P = 50%

- d = absolute maximum allowance which is considered as importance difference. Set up d = 0.06

So required sample size:

$$n = \frac{1.96^2 0.5(1-0.5)}{0.06^2} = 266.7$$

The required sample size was 267 mothers of children under 5 years old.

3.4 Sample selection

The study used simple random sampling method for data collection. In the first step, two Sub-districts which have the government hospital, health center, private clinic and drug store was randomly selected. The two selected Sub-district were Sakaeo and Ta-Kasem. The number of the sample size for each Sub-district was calculated using proportion to size. Proportion of respondents from each Sub-district was calculated by using the number of mothers of children under 5 years old of each Sub-district selected divided by the total mothers of children under 5 years old of the two Sub-districts and multiplied by 100% in order to make the proportion to percentage as show in Table 5.

The percent of the population in Sub-district No.1 was

$$= \frac{710 \times 100}{1223} = 58.05\ \%$$

The percent of population in Sub-district No.1 = 58.05 % . Next we calculated sample size for each Sub-district by using 58.05 % multiplied by the sample size (267)

$$= \frac{58.05 \times 267}{100} = 155$$

The number of respondents from Sub-district No.1 was 155 mothers. We used the similar calculation for the second Sub-district, as show in the table below

Table 5 The proportion of the sample size from each Sub-District

No.	Sub-district name	Total mother	Percent of respondents	Number of respondents
1	Sakaeo	710	58.05	156
2	Ta-Kasem	513	41.95	113

In the second step, the sample size of each Sub-district selected was divided to every villages of each Sub-district. The data was collected from January, 15th to January, 31st 2006. Inclusion criteria follow as:

- Mothers of children under 5 years old.
- Live at least one year in Muang district of Sakeo province.
- Children had illness in past one year.

3.5 Research instrument

Data were collected with a constructed questionnaire. Most of the questions in the questionnaire consisted of closed-ended questions but some were open-ended. English questionnaire was translated into Thai language. The structured questionnaire consisted of 5 parts as follows:

Part 1: Socio-demographic characteristics

The questions of this part were included socio-demographic characteristics of the respondents. It consisted of age, main occupation, education, marital status, family composition. Most of the questions were closed-ended.

Part 2: Attitudes towards public health services.

The questions were concerned about attitudes towards public health services. The questions asked the opinion of the mothers and measure by giving degree of agreement. It has 5 choices, that were strongly agree, agree, don't know or not sure, disagree and strongly disagree. The attitude of mothers towards public health services,

this study had 5 answers for each question in this part, this study gave the score according to the degree of attitude (5 = strongly agree, 4 = agree, 3 = don't know/ not sure, 2 = disagree, 1 = strongly disagree).

While the overall attitude was classified into:

Low attitude < Mean – SD

Mean – SD ≤ Moderate attitude ≤ Mean + SD

High attitude > Mean + SD

Part 3: Knowledge towards general health services.

The questions asked the mothers about the activities and information towards general health services. It has 3 choices, that were yes, not sure and no. We gave the score according to the answer (2 = yes, 1 = not sure, 0 = no).

Part 4: Enabling factors

The question asked the mothers about the poverty status of family, distance and transportation.

Part 5: Need factors

The questions of this part concerned about the child's general health over the past one year, unmet need for health care in the past one year, the last well child examination.

3.6 Pre-test

The questionnaire was pre-tested for the reliability test of the attitude part and knowledge for 30 cases. The pre-test was on January 13th 2006 in Sakwan Sub-district of Muang district, Sakaeo Province by the trained interviewers. According to the reliability test of questionnaire used α-coefficient method. It revealed that the α-coefficient attitude part was 0.61 and knowledge part was 0.70.

3.7 Data collection

The data were collected by interview the mothers of children under 5 years old. After interview, the interviewers had to check all of the questionnaires items and complete filling. The interviewers were trained clearly and correctly understands the questionnaire in order to complete all questions. They also had to practice to ask the questions before going to interview the mothers.

3.8 Data analysis

Data were coded and analyzed by using a computer MINITAB program.

The data were analyzed according to each objective of research. To describe each variable included into the study by percentages, mean and standard deviation were applied based upon types of variables. The evaluation of the association between each independent variable and dependent variable was analyzed by Chi-square test. Logistic Regression was performed to determine main factors affecting the use of public health services after adjusting for other independent variables.

CHAPTER 4
RESULTS

This chapter showed the findings of this research according to the objectives of the study presented in chapter 1. The data were collected from 272 mothers of children under 5 years old in 22 villages who lived around the government hospital, the Health Center, the private clinic and the drug store in two Sub Districts: Sakaew and Ta-Kasem, Muang District, Sakaeo Province. These mothers are selected by the inclusion criteria:

- Mothers of children under 5 years old.
- Live at least one year in Muang District of Sakeo Province.
- Children had illness in past one year.

Results consisted of two parts, descriptive part and analytic part. The descriptive part was described into 3 sections. The first section showed predisposing factors (socio demographic characteristic, attitude toward public health services and knowledge toward health services). The second section showed enabling factors (poverty status, distance, transportation, cost). The third section showed need factors (the child's illness level and treatment method). The analytical part presented the relationship between independent variables regarding predisposing components, enabling components, need components and dependent variable regarding health services utilization among mothers of children under 5 years old.

Part I: Descriptive of all independent variables

4.1 Socio-economic and demographic characteristics of the respondents

Table 6 shows the socio-economic and demographic characteristics of respondents. The age range of mothers was 16 to 59 years old. Large proportion of the mothers (42.65 percent) is in age between 20-29 years, the age between 30-39 years

(38.24 percent) is the next group and the remainder (under 20 and over 40 years) are 4-10 percent. The mean mother's age is 32 years. The highest number of duration of residence group is over 5 years at 85.66 percent. The family size range is 3 to 11 persons and the family size average is 5 persons per family. In family composition, 49.63 percent is percentage of highest group (husband + wife + child/ children) and the second group (husband + wife + parents + child/ children) is 45.59 percent. The number of children with age under 5 years currently living with theirs mothers is 1 child at 84.93 percent. Regarding the main occupation of respondents, 35.29 percent is housewife followed by laborer at 19.85 percent and agriculture at 16.18 percent; 28.68 percent is general group (government or private employee, own business, other). The education level of most mothers is primary school level (59.19 percent) and 40.81 percent is secondary school. The majority of respondents are married (95.22 percent) and the other (widowed, divorced, separated) is 4.78 percent.

Table 6 Number and percentage of mothers classified by socio demographic

Socio-demographic factors	Number	Percent
Age: (age group)		
< 20 years	11	4.04
20-29 years	116	42.65
30-39 years	104	38.24
40-49 years	28	10.29
50 + years	13	4.78
(mean = 31.563 , SD = 8.381, min = 16 ,max = 59)		
Duration of residence		
1-4 years	39	14.34
5 + years	233	85.66
Main occupation		
Agriculture	44	16.18
Housewife	96	35.29
Laborer	54	19.85
Government employee	4	1.47
Private employee	29	10.66
Own business	9	3.31
Other	36	13.24

Table 6 Number and percentage of mothers classified by socio demographic (cont.)

Socio-demographic factors	Number	Percent
Education		
No education	6	2.21
Primary school	155	56.99
Secondary/high school	91	33.46
Vocation	9	3.31
Diploma	2	0.74
Bachelor	9	3.31
Marital status		
Married	259	95.22
Widowed	3	1.10
Separated	10	3.68
Family composition		
Husband + wife + child/children	135	49.63
Husband + wife + parents + child/children	124	45.59
Wife + child/children	10	3.68
Other	3	1.10
Number of children with age under 5 years currently living with theirs mothers		
1 child	231	84.93
2-3 Childs	39	14.34
4 + Childs	2	0.74
(mean = 1.1765, SD = 0.4607 , min = 1, max = 4) Childs/ mother		

4.2 Accessibility to health services

Table 7 and 8 show the result of enabling factors including poverty characteristics, distance and transportation. The poverty characteristics were described by income, type of residence and comparison with economic of neighbors. The income's majority of mothers 55.51 percent were sufficient and no saving, 34.56 percent was higher economic, they were sufficient and having saving. Only 9.93 percent was not sufficient. But 88.97 percent of mothers were the owner of theirs houses. When mothers compare theirs economic status with theirs neighbors, almost of them 93.38 percent estimate moderately.

Regarding the distance from mother's house to health care services, 66.91 percent lived near public health care and the average distance is 7.28 km. The proportion of mothers who lived near private health care is 33.09 percent and the average distance is 10.4 km. By their own vehicles, 79.34 percent of the mothers spent averagely 24 minutes to arrive health care services station and 93.75 percent felt conveniently about the time of transportation. The respondents had to pay averagely 48 Baht for the cost of transportation and they considered this fee as an appropriate amount.

Table 7 Number and percentage of mothers classified by accessibility of health services.

Accessibility of health services	Number	Percent
Poverty characteristics		
Income		
Sufficient and having saving	94	34.56
Sufficient and no saving	151	55.51
Not sufficient	27	9.93
Type of residence		
Own house	242	88.97
Rental house	4	1.47
Other	26	9.56
Comparison with economic of neighbors		
Rich	7	2.57
Moderate	254	93.38
Poor	11	4.04
Place of house		
Near public health care	182	66.91
Near private health care	90	33.09
Transportation		
Walking	3	0.74
Your own vehicle	215	79.34
Public car	50	18.45

Table 7 Number and percentage of mothers classified by accessibility of health services (cont.)

Accessibility of health services	Number	Percent
Transportation		
Other	4	1.48
Convenient time of transportation		
No convenience	17	6.25
Convenience	255	93.75
Suitable cost (56 missing data)		
Not appropriate	13	6.02
Appropriate	203	93.98

Table 8 Mean and standard deviation classified by accessibility of health services.

Accessibility of health services	Mean	SD	Min	Max
Distance from house to public health care (km)	7.28	5.66	1	27
Distance from house to private health care (km)	10.4	7.42	1	26
Time of transportation (minutes)	24.19	13.49	3	70
Cost of transportation (56 miss data) (Baht)	48.03	42.75	10	300

4.3 Attitude toward public health services

This part consisted 15 questions about the attitude toward public health services. There were two kinds of questions: one was 8 positive questions and another was 7 negative questions. The details of attitude by item were showed in Table 9 below:

Table 9 Number and percentage distribution of mothers classified by level of attitude toward public health services.

No.	Statement	Total of respondents (N=272)				
		Strongly agree (%)	Agree (%)	Not sure (%)	Disagree (%)	Strongly disagree (%)
1	Medicine in public health service is more effective than private health service	54 (19.85)	93 (34.19)	92 (33.82)	31 (11.40)	2 (0.74)
2	Public health care provides some free services	148 (54.41)	115 (42.28)	8 (2.94)	1 (0.37)	0 (0.00)
3	Public health service gives a long waiting time more than private health service	63 (23.16)	149 (54.78)	36 (13.24)	20 (7.35)	4 (1.47)
4	Personnel of public health service pay attention and listen to you about your health problems	71 (26.10)	150 (55.15)	43 (15.81)	7 (2.57)	1 (0.37)
5	When you go to public health service the health personnel are always absent	7 (2.57)	39 (14.34)	47 (17.28)	146 (53.68)	33 (12.13)
6	The quality of drug in private health service is better than public health service	44 (16.18)	116 (42.65)	87 (31.99)	23 (8.46)	2 (0.74)
7	Public health service is clean	73 (26.84)	163 (59.93)	15 (5.51)	17 (6.25)	4 (1.47)
8	Public health service has good environment	71 (26.10)	173 (63.60)	19 (6.99)	6 (2.21)	3 (1.10)
9	Public health service's medical equipment are modern	83 (30.51)	130 (47.79)	34 (12.50)	23 (8.46)	2 (0.74)
10	Public health service has drug enough for treatment	92 (33.82)	122 (44.85)	41 (15.07)	16 (5.88)	1 (0.37)
11	Public health service has medical equipment enough for treatment	88 (32.35)	113 (41.54)	39 (14.34)	31 (11.40)	1 (0.37)
12	You can not trust treatment from health personnel of public health service	14 (5.15)	26 (9.56)	41 (15.07)	159 (58.46)	32 (11.76)
13	You can not trust diagnosis from health personnel of public health service	7 (2.57)	21 (7.72)	44 (16.18)	167 (61.40)	33 (12.13)
14	Public health service location is not appropriate for your village	25 (9.19)	59 (21.69)	38 (13.97)	140 (51.47)	10 (3.68)
15	Public health service can provide only treatment for simple illness and injury	53 (19.49)	60 (22.06)	37 (13.60)	113 (41.54)	9 (3.31)

The questions 1, 2, 4, 7, 8, 9, 10 and 11 in part B of questionnaire are positive statements the rest of this part is negative statement. The questions asked the opinion of the mothers and measured by giving degree of agreement. There were 5 choices, that was strongly agree, agree, don't know or not sure, disagree and strongly disagree. The score of the positive answer could be scored as 5 for strong agree, 4 for agree, 3 for not sure, 2 for disagree and 1 for strong disagree. On the contrary with the positive answer, the negative answer can be scored as 1 for strong agree, 2 for agree, 3 for not sure, 4 for disagree and 5 for strong disagree. Overall attitude score is 75. The average attitude score is 53.72 (SD= 5.93), minimum score is 37 and the maximum score is 70.

For the positive questions: a majority of mothers gave strong agree and agree on the following questions: 1) Medicine in public health service. The mothers agreed that public health service is more effective than private health service (54.04 percent), 2) Personnel of public health service. It was found that mothers identified public health service pay attention and listen to patient health problems (81.25 percent), 3) Public health service which is regarded as clean (86.77 percent), 4) Public health service items. Mothers say public health service has good environment (89.70 percent), 5) Public health service's medical equipment are considered modern (78.30 percent), 6) Public health service has drug enough for treatment (78.67 percent) and 7) Public health service has medical equipment enough for treatment (73.89 percent).

For the negative questions: the mothers agree with the weakness of public health services, that are: public health service gives a long waiting time more than private health service (54.78 percent) and the quality of drug in private health service is better than public health service (42.65 percent).

On the other hand, the mothers disagree with the weakness of public health services, that was: when mothers go to public health service the health personnel are always absent (53.68 percent), mothers can not trust treatment from health personnel of public health service (58.46 percent), mothers can not trust diagnosis from health personnel of public health service (61.40 percent), public health service location is not

appropriate for your village (51.47 percent) and public health service can provide only treatment for simple illness and injury (41.54 percent).

In Table 10, the mean ± SD can be used as a cut point; it divided the level of attitude into three groups as high attitude, moderate attitude and low attitude. The group was high attitude (>59.65 score) at 13.6 percent, the second group was moderate attitude (47.79 score to 59.65 score) at 70.96 percent and the last group was low attitude (<47.79 score) at 15.44 percent toward public health services.

Table 10 Number and percentage of mothers classified by level of attitude toward public health services.

Attitude level	Number	Percent
High attitude (> 59.65 score)	37	13.60
Moderate attitude (47.79 score to 59.65 score)	193	70.96
Low attitude (< 47.79 score)	42	15.44
Total	272	100.00

(mean = 53.724, SD = 5.931 , min = 37, max = 70)

4.4 Knowledge toward health services

This part consist 12 questions about the knowledge toward public health services and private health services. Table 11 shows the number and percentage distribution of mothers classified by level of knowledge toward health services. 95.22 percent of mothers know about the 30 baht program in public health service. Regarding some other activities of public health service, the mothers know about: office hours of the public health service is 8:30 – 16:30 (85.29 percent), public health service offers an immunization for children under 5 years old (91.54 percent) and public health service has an MCH and Family planning services (90.44 percent).

Table 11 Number and percentage distribution of mothers classified by level of knowledge toward health services.

No.	Statement	Total of respondents (N=272)		
		Yes (%)	Not sure (%)	No (%)
C.1	There are always doctors at private health service	154 (56.62)	76 (27.94)	42 (15.44)
C.2	There are enough dentists at private health service	121 (44.49)	123 (45.22)	28 (10.29)
C.3	There are specialized doctors at private health service	176 (64.71)	76 (27.94)	20 (7.35)
C.4	Private health service has an X-ray	155 (56.99)	109 (40.07)	8 (2.94)
C.5	Private health service has got ECG for treatment	141 (54.84)	130 (47.79)	1 (0.37)
C.6	Private health service has got CT for service	129 (47.43)	139 (51.10)	4 (1.47)
C.7	Office hours of the public health service is 8:30 – 16:30	232 (85.29)	24 (8.82)	16 (5.88)
C.8	Office hours of the private health service is 8:30 – 16:30	20 (7.35)	131 (48.16)	121 (41.49)
C.9	Public health service offers an immunization for children under 5 years old	249 (91.54)	22 (8.09)	1 (0.37)
C.10	Public health service has an MCH and Family planning services	246 (90.44)	26 (9.56)	0 (0.00)
C.11	There is a 30 baht program in public health service	259 (95.22)	13 (4.78)	0 (0.00)
C.12	There is a 30 baht program in private health service	9 (3.31)	62 (22.79)	201 (73.90)

For measuring the level of knowledge, the yes answer can be scored as 2, 1 for not sure and 0 for no. Overall knowledge score is 24. The average knowledge score is 17.32 (SD = 2.62), minimum score is 8 and the maximum score is 24. The level of knowledge divided into three groups as good knowledge, fair knowledge and poor knowledge by using mean ± SD as the cut point. The score of respondents had poor knowledge at 15.44 percent (<14.7 score), 60.29 percent for the fair knowledge (14.70 score to 19.94 score) and good knowledge 24.26 percent (>19.94 score). The detail was showed in Table 12.

Table 12 Number and percentage of mothers classified by level of knowledge toward health services.

Knowledge level	Number	Percent
Good knowledge (> 19.94 score)	66	24.26
Fair knowledge (14.70 score to 19.94 score)	164	60.29
Poor knowledge (< 14.70 score)	42	15.44
Total	272	100.00

(mean = 17.327 , SD = 2.623 , min = 8, max = 24)

4.5 Utilization of public health services

Table 13 showed the frequency of using public health services of mothers for the child in the past one year. It was found that 90.44 percent had ever used public health service for treatment. While who ever used one time 20.96 percent, two times 29.04 percent, and more than two times 40.44 percent. The percent of respondent who never used public health services within 1 year only were 9.56 percent.

Table 13 Number and percentage of mothers classified by frequency of using public health service for the child in the past one year.

Frequency of using public health service for the child in the past one year	Number	Percent
Never used	26	9.56
Ever used	246	90.44

Table 13 Number and percentage of mothers classified by frequency of using public health service for the child in the past one year (cont.)

Frequency of using public health service for the child in the past one year	Number	Percent
Ever used	246	90.44
1 time	57	20.96
2 times	79	29.04
More than 2 times	110	40.44

In past one year, the number of mothers used public health care was 3 times more than those who used private health care. (Table 14)

Table 14 Number and percentage of mothers classified by the kind of heath service was used by the latest child's illness in past one year.

Statement	Number	Percent
Public health care	203	74.63
Private health care	69	25.37

Regarding the child's illness was mild, the majority of mothers bought drug from drug store at 27.21 percent; that was theirs fist method for treatment. If that symptom still remained, 64.71 percent of mothers went to government hospital; that was the highest proportion. (Table 15)

Table 15 Number and percentage of mothers classified by mother's first method for treatment when their child's illness is mild

Statement	Mild illness	
	First method for treatment N (%)	If that symptom still remains N (%)
Self treatment	50 (18.38)	5 (1.84)

Table 15 Number and percentage of mothers classified by mother's first method for treatment when their child's illness is mild (cont.)

Statement	Mild illness	
	First method for treatment N (%)	If that symptom still remains N (%)
Buy drug from drug store	74 (27.21)	2 (0.74)
Go to health center	67 (24.63)	62 (22.79)
Go to private clinic	29 (10.66)	23 (8.46)
Go to government hospital	52 (19.22)	176 (64.71)
Go to private hospital	0 (0.00)	4 (1.47)

4.6 Association between utilization of public health services and mother's attitude toward public health service.

Table 16 shows association between utilization of public health services and mother's attitude toward public health service. This association was not found to be significant.

Table 16 Association between utilization of public health services and mother's attitude toward public health service

Attitude	Total (N)	Use public health service (%)	Not use public health service (%)	Fisher Exact test	p-value
High attitude (≥ 59.65 score)	37	30 (81.08)	7 (18.92)	4.34	0.063
Low attitude (< 59.65 score)	235	216 (91.91)	19 (8.09)		

4.7 Association between utilization of public health services and the knowledge of mothers whose children under 5 years old.

Table 17 shows association between utilization of public health services and knowledge of mother whose children under 5 years old. It found that mother's knowledge was significantly associated with utilization of public health services (p-value = 0.003).

Table 17 Association between the use of public health services and mother's knowledge toward general health services

Knowledge	Total (N)	Use public health service (%)	Not use public health service (%)	$\chi 2$	p-value
Good knowledge (> 19.94 score)	66	61 (92.42)	5 (7.58)	11.709	0.003
Fair knowledge (14.70 score to 19.94 score)	164	153 (93.29)	11 (6.71)		
Poor knowledge (< 14.70 score)	42	32 (76.19)	10 (23.81)		

4.8 Association between health service types and attitude of mother whose children under 5 years old with mild illness.

A second criterion in using public health services was measured by the question on the kind of type of health service when illness occurred.

Table 18 shows association between health service types and attitude of mother whose children under 5 years old with mild illness. This association is significantly found at p-value = 0.003. In other words, the mothers with low attitude toward public health service were more likely to buy drug at drug store or self treatment and those with moderate attitude toward public health service were equal

proportion of buying drug and going to health center. But majority of the mothers who had high attitude toward public health service went to government hospital.

Table 18 Association between health service types and attitude of mother whose children under 5 years old with mild illness.

Attitude	Total (N)	Self treatment (%)	Buy drug (%)	Go to health center (%)	Go to private clinic (%)	Go to government hospital (%)	χ2	p-value
High attitude (> 59.65 score)	37	9 (24.32)	7 (18.92)	5 (13.51)	2 (5.41)	14 (37.84)		
Moderate attitude (47.79 score to 59.65 score)	193	30 (15.54)	56 (29.02)	55 (28.50)	18 (9.33)	34 (17.62)	23.12	0.003
Low attitude (< 47.79 score)	42	11 (26.19)	11 (26.19)	7 (16.67)	9 (21.43)	4 (9.52)		

Since the expected number of cases in some cells is less than 5, the next table will show the mother's attitude in two groups associated with kinds of health service. This association was significantly found at p-value = 0.003. (Table 19)

Table 19 Association between health service types and attitude of mother whose children under 5 years old with mild illness.

Attitude	Total (N)	Self treatment (%)	Buy drug (%)	Go to health center (%)	Go to private clinic (%)	Go to government hospital (%)	χ2	p-value
High attitude (≥ 53.724 score)	152	28 (18.42)	35 (23.03)	36 (23.68)	12 (7.89)	41 (26.97)	15.93	0.003

Table 19 Association between health service types and attitude of mother whose children under 5 years old with mild illness (cont.)

Attitude	Total (N)	Self treatment (%)	Buy drug (%)	Go to health center (%)	Go to private clinic (%)	Go to government hospital (%)	χ2	p-value
Low attitude (< 53.724 score)	120	22 (18.33)	39 (32.50)	31 (25.83)	17 (14.17)	11 (9.17)		

4.9 Association between health service types and knowledge of mother whose children under 5 years old with mild illness.

Table 20 shows association health service types and knowledge of mother whose children under 5 years old with mild illness. It was found that mother's knowledge was not significantly associated with the kind of health services.

Table 20 Association between health service types and knowledge of mother whose children under 5 years old with mild illness.

Knowledge	Total (N)	Self treatment (%)	Buy drug (%)	Go to health center (%)	Go to private clinic (%)	Go to government hospital (%)	χ2	p-value
Good knowledge (> 19.94 score)	66	11 (16.67)	21 (31.82)	13 (19.70)	9 (13.64)	12 (18.18)		
Fair knowledge (14.70 score to 19.94 score)	164	34 (20.73)	44 (26.83)	46 (28.05)	14 (8.54)	26 (15.85)	11.70	0.165
Poor knowledge (< 14.70 score)	42	5 (11.90)	9 (21.43)	8 (19.05)	6 (14.29)	14 (33.33)		

4.10 Association between the health service types and attitude of mother whose children under 5 years old with severe illness.

Table 21 shows association between the health service types and attitude of mother whose children under 5 years old with severe illness. It was found that mother's attitude was not significantly associated with the kind of health services.

Table 21 Association between the health service types and attitude of mother whose children under 5 years old with severe illness.

Attitude	Total (N)	Self treatment + Buy drug + Go to private clinic (%)	Go to health center + Go to government hospital (%)	$\chi 2$	p-value
High attitude (> 59.65 score)	37	2 (5.41)	35 (94.59)		
Moderate attitude (47.79 score to 59.65 score)	193	32 (16.58)	161 (83.42)	3.46	0.177
Low attitude (< 47.79 score)	42	8 (19.05)	34 (80.95)		

4.11 Association between the health service types and knowledge of mother whose children under 5 years old with severe illness.

Table 22 shows association between the health service types and knowledge of mother whose children under 5 years old with severe illness. It was found that mother's knowledge was not significantly associated with the kind of health services.

Table 22 Association between the health service types and knowledge of mother whose children under 5 years old with severe illness.

Knowledge	Total (N)	Self treatment + Buy drug + Go to private clinic (%)	Go to health center + Go to government hospital (%)	χ2	p-value
Good knowledge (> 19.94 score)	66	8 (12.12)	58 (87.88)	0.93	0.627
Fair knowledge (14.70 score to 19.94 score)	164	28 (17.07)	136 (82.93)		
Poor knowledge (< 14.70 score)	42	6 (14.29)	36 (85.71)		

4.12 Association between the type of health service at first visit and predisposing and enabling factors focus on mild illness case.

4.12.1 Association between the type of health service and main occupation of mothers.

In Table 23, the main occupation of mothers was divided by four groups: agriculture, laborer, housewife and other. Mother's occupation was found to be significant associated with the kind of health services. When there was an association, mothers with agriculture occupation tended to do self-treatment while mothers working as housewife used government hospital.

Table 23 Association between health service types and main occupation of mothers whose children under 5 years old with mild illness.

Main occupation	Total (N)	Self treatment (%)	Buy drug (%)	Go to health center (%)	Go to private clinic (%)	Go to government hospital (%)	χ2	p-value
Agriculture	44	8 (18.18)	12 (27.27)	15 (34.09)	3 (6.82)	6 (13.64)	22.92	0.028

Table 23 Association between health service types and main occupation of mothers whose children under 5 years old with mild illness (cont.)

Main occupation	Total (N)	Self treatment (%)	Buy drug (%)	Go to health center (%)	Go to private clinic (%)	Go to government hospital (%)	χ2	p-value
Laborer	54	10 (18.52)	14 (25.93)	16 (29.63)	7 (12.96)	7 (12.96)		
Housewife	96	20 (20.83)	26 (27.08)	28 (29.17)	5 (5.21)	17 (17.71)		
Other	78	12 (15.38)	22 (28.21)	8 (10.26)	14 (17.95)	22 (28.21)		

4.12.2 Association between the type of health service and mother's education.

Education level was classified into two groups: primary school and secondary school/ higher. Education was significant associated with the kind of health services (p-value = 0.037). When there was statistically significant, mothers with secondary education tended to go to government hospital while mothers who had low education (i.e., primary level used self treatment when there was an illness occurred. The detail was showed in Table 24 below:

Table 24 Association between health service types and education of mothers whose children under 5 years old with mild illness.

Education	Total (N)	Self treatment (%)	Buy drug (%)	Go to health center (%)	Go to private clinic (%)	Go to government hospital (%)	χ2	p-value
Primary school	161	28 (17.39)	43 (26.71)	50 (31.06)	15 (9.32)	25 (15.53)		
Secondary school and higher	111	22 (19.82)	31 (27.93)	17 (15.32)	14 (12.61)	27 (24.32)	10.18	0.037

4.12.3 Association between the type of health service and family composition of mothers.

Family composition of mothers was the study factor, it was significant associated with the kind of health services (p-value = 0.032). Family composition was divided by three groups. In the group consisted of husband, wife and child/children, they bought drug in drug store at 25.19 percent, it was highest percentage in this group. With another choice, the group (husband + wife + parents + child/children) has two highest proportions: buying drug at 31.45 percent and going to health center at 29.84 percent. However the association may be have some errors as the number of cases, mothers in other family composition was very small. (Table 25)

Table 25 Association between health service types and family composition of mothers whose children under 5 years old with mild illness.

Family composition	Total (N)	Self treatment (%)	Buy drug (%)	Go to health center (%)	Go to private clinic (%)	Go to government hospital (%)	χ2	p-value
Husband + wife + child/children	135	31 (22.96)	34 (25.19)	27 (20.0)	12 (8.89)	31 (22.96)		
Husband + wife + parents + child/children	124	14 (11.29)	39 (31.45)	37 (29.84)	16 (12.90)	18 (14.52)	16.79	0.032
Other	13	5 (38.46)	1 (7.69)	3 (23.08)	1 (7.69	3 (23.08)		

4.12.4 Association between the type of health service and income of mother's family.

As show in Table 26, this factor consisted of three groups: sufficient and having saving, sufficient and no saving and the last was not sufficient. In the group with sufficient and having saving, the choice it was highest percentage is the government hospital (28.72 percent). The second group with sufficient and no saving,

the majority (31.79 percent) went to health center. “Self treatment” was the highest choice of the mothers with not sufficient. Income of mother’s family was significantly associated with the kind of health services (p-value < .01). When there was found an association, mothers with not sufficient (37.04 percent) tended to use self-treatment while mothers who were sufficient and no saving (31.79 percent) and mothers who were sufficient and having saving (28.72 percent) used health centers and government hospital. Regarding the “go to private clinic”, mothers with sufficient and having saving (19.15 percent) tend to use it while mothers who were sufficient and no saving (5.96 percent) and mothers who were not sufficient (7.41 percent).

Table 26 Association between health service types and family’s income of mother whose children under 5 years old with mild illness.

Income	Total (N)	Self treatment (%)	Buy drug (%)	Go to health center (%)	Go to private clinic (%)	Go to government hospital (%)	χ2	p-value
Sufficient and having saving	94	15 (15.96)	22 (23.40)	12 (12.77)	18 (19.15)	27 (28.72)	33.56	< .01
Sufficient and no saving	151	25 (16.56)	45 (29.80)	48 (31.79)	9 (5.96)	24 (15.89)		
Not sufficient	27	10 (37.04)	7 (25.93)	7 (25.93)	2 (7.41)	1 (3.70)		

4.12.5 Association between the type of health service and mother’s transportation.

When the mother transport by theirs own vehicles, the majority of them went to drug store. And 40% of the other went to health center. There was association between the type of health service and mother’s transportation because p-value = 0.016. (Table 27)

Table 27 Association between health service types and transportation of mother whose children under 5 years old with mild illness.

Method of transportation	Total (N)	Self treatment (%)	Buy drug (%)	Go to health center (%)	Go to private clinic (%)	Go to government hospital (%)	χ2	p-value
Your own vehicle	217	38 (17.51)	66 (30.41)	45 (20.74)	25 (11.52)	43 (19.82)	12.13	0.016
Other	55	12 (21.82)	8 (14.55)	22 (40.0)	4 (7.27)	9 (16.36)		

4.12.6 Association between the type of health service and mother's traveling time.

The highest number of two groups (less than 11 minutes and from 11 to 38 minutes) selected the drug store for buying the drug. On other hand, half of respondent's finding 56.82 percent went to health center when the time was over 38 minutes. There was significant association between the type of health service and mother's traveling time (p-value < 0.0001) as show in Table 28.

Table 28 Association between health service types and traveling time of mother whose children under 5 years old with mild illness.

Time	Total (N)	Self treatment (%)	Buy drug (%)	Go to health center (%)	Go to private clinic (%)	Go to government hospital (%)	χ2	p-value
< 11 minutes	53	8 (15.09)	21 (39.62)	14 (26.42)	6 (11.32)	4 (7.55)	40.78	< .01
11-38 minutes	175	36 (20.57)	48 (27.43)	28 (16.0)	20 (11.43)	43 (24.57)		
> 38 minutes	44	6 (13.64)	5 (11.36)	25 (56.82)	3 (6.82)	5 (11.36)		

4.13 Association between the type of health service at first visit and predisposing and enabling factors focus on severe illness case.

This part presented only factors that had strong association as follow:

4.13.1 Association between the type of health service and distance from mother's house to health care services.

The majority of mothers (87.91 percent) who lived near public health care and 77.78 percent who lived near private health care selected the health center or the government hospital on the first visit. There was association between the type of health service and distance from mother's house to health care services because (p-value = 0.03). In other words, mothers who lived near private health care used private health service more those who lived near public health care tended to use government hospital as shown in Table 29.

Table 29 Association between health service types and distance from mother's house to health care services when their child's illness is severe.

House	Total (N)	Self treatment + Buy drug + Go to private clinic (%)	Go to health center + Go to government hospital (%)	χ2	p-value
Near public health care	182	22 (12.09)	160 (87.91)	4.73	0.03
Near private health care	90	20 (22.22)	70 (77.78)		

4.13.2 Association between the type of health service and mother's traveling time.

Table 30 showed that 81.13 percent for group less than 11 minutes, 88.57 percent for group from 11 to 38 minutes and 72.73 percent for group more than 38 minutes, all of them selected to go to health center or government hospital.

Table 30 Association between health service types and traveling time of mother whose children under 5 years old with severe illness.

Time	Total (N)	Self treatment + Buy drug + Go to private clinic (%)	Go to health center + Go to government hospital (%)	χ2	p-value
< 11 minutes	53	10 (18.87)	43 (81.13)	7.35	0.025
11-38 minutes	175	20 (11.43)	155 (88.57)		
> 38 minutes	44	12 (27.27)	32 (72.73)		

4.14 Association between public health utilization and predictive factors.

The results using Multiple Logistic Regression, after adjusting for others factors, the mothers with low attitude were less likely to use public health service than those with high attitude. This association was significantly found (p-value = 0.024). (Table 31)

Table 31 Logistic Regression for association between the use of public health services and attitude.

Predictor	Odds Ratio	p-value
High attitude	1.00	
Moderate attitude	0.97	0.94
Low attitude	0.27	0.024

(Adjusted for age group, duration of residence, main occupation, education, marital status, knowledge toward health services, income of mother's family and distance, attitude was significantly associated with the use of public health services)

In severe illness cases, base on the result by using Multiple Logistic Regression, after adjusting for others factors, mothers who were laborers tended to

use public health service 3.47 times compared to those being agricultures. This association was found to be significantly (p-value = 0.035). (Table 32)

Table 32 Logistic Regression for association between the use of public health services and occupation .

Predictor	**Odds Ratio**	**p-value**
Agriculture	1.00	
Laborer	3.47	0.025
Housewife	1.48	0.496
Other	1.84	0.296

(Adjusted for age group, duration of residence, attitude toward public health services, education, marital status, knowledge toward health services, income of mother's family and distance, main occupation was significantly associated with the use of public health services)

CHAPTER 5

DISCUSSION

Purpose of this study to examine the association between the attitude, the knowledge and types/ kinds of health service among mothers with children aging under 5 years old at community. At the same time this study investigate the relationship between some factors and the types/ kinds of health services at community from mothers whose children aging under 5 with disease. According to the conceptual framework, there are three factors comprised of predisposing factors (socio-demographic characteristics, attitude toward public health services, knowledge toward health services), enabling factors (accessibility to health services) and need factor (the child's illness level).

The research was conducted in Muang District, Sakaeo Province, Thailand. Two Sub-Districts: Sakaeo and Ta-Kasem were selected base on criteria as: the distance of the private clinic and the drug stores must be similar to the distance of the hospital or health center, so that mothers have the equal opportunity to select the health services for treating their children.

The sample size was 272 mothers. The number of respondents from each Sub-District calculate according to the proportion of the total mothers of Sakeo and Ta-Kasem Sub-District. Overall, there are 22 villages in these Sub-districts. The simple sampling applied to collect data. The mothers were selected on the basis of following criteria:

- Mothers of children under 5 years old.
- Live at least one year in Muang district of Sakeo province.
- Children had illness in past one year.

All the interviewers were trained to clearly and correctly understand the questionnaire in order to complete all questions. The answers of respondents were entered and analyzed by computer using Epi Data and Minitab program.

The result was analyzed by two parts: the first is descriptive part, it described all the variables by describing frequency, percentage, min, max, mean, SD of the factors; the second is analytic part, it used Chi-square and p-value to show the association between the independent variables and dependent variables. Logistic regression showed the insensitive effect of selected factors and the type of health service. Discussion on this result was done in each category as in the following:

5.1 Attitude of the mothers and types of health services

Table 9 shows the number and percentage distribution of mothers classified by level of attitude toward public health services. In this table, the questions 12th and 13th asked about the trust of public health service, more than half of mothers still believe on public health services. The weaknesses of public health system are showed by questions 3rd and 6th. These questions asked about the waiting time and the quality of drug. The followings are the results: 1) 54.78 percent of mothers agreed that “Public health service gives a long waiting time more than private health service”, and 2) 42.65 percent of mothers agreed that “The quality of drug in private health service is better than public health service”.

The waiting time is the first problem that happens from a long time in many sectors of government system. For the quality of drug in private health service is better than public health service, the reasons may be that the limited budget can not buy the good drug and some medicaments are free, it is naturally not good.

Overall, in Table 10 only 15.44 percent of mother had low attitude toward public health services. This group selected with the high priority about private health services. That is evidenced by 26.19 percent go to drug store, with the same percentage are self treatment and 21.43 percent go to private clinic (Table 18). In case

of the child's illness is mild, attitude factor has relationship with the type of health services that mothers used (Table 18). But in severe cases, there is not the association between mother's attitude and the kind of health services (Table 21).

5.2 Knowledge of the mothers and types of health services

Regarding the public health services, the majority of mothers know about its activities. In Table 11, 85.29 percent know that the office hours are 8:30 am – 4:30 pm. Especially, the programs related with maternal and child's health are also know by many mothers. There are 91.54 percent know that the public health service offers an immunization for children under 5 years old and 90.44 percent know that the public health service has an MCH and family planning services. The highest number of mother's answer on a 30 Baht program. That is 95.22 percent said they know a 30 Baht program. It demonstrates the 30 Baht health care scheme that is important and necessary with mothers.

Regarding the private health services, 56.62 percent and know that there are always doctors and the respondents can not use the 30 Baht program at private health care (Table 11).

From Table 17, it is found that mother's knowledge is significantly associated with the frequency of using public health services (p-value = 0.003). 92.42 percent of mothers who have good knowledge and fair knowledge use public health service.
Although the percentage is lower than two groups above, the group with poor knowledge (76.19 percent) use public health service more than not use. That evidence the mothers are more likely the public health service because this service provide the benefit to them (i.e. some frees or cheaper), so the respondents will use it. But when the study finds the relationship between mother's knowledge and type of health service, both of cases there are not significant because p-value = 0.165 for mild illness cases (Table 20) and p-value = 0.627 for severe illness cases (Table 22). That confirms the knowledge factor is not necessary and sufficient to cause the use public health services.

5.3 The association between the type of health service and main occupation of mothers when theirs child's illness is mild

The main occupation was divided into four groups. The three groups (agriculture, laborer and housewife) have the highest number of proportion in the use of health center for treatment. These percentages are: 34.09, 29.63 and 29.17 percent (Table 23). For the fourth group (other: government employee, private employee, own business ...), they selected two kind of health service with equal proportion: "buy drug in drug store" and "go to government hospital" at 28.21 percent (Table 23). It is obvious that the mothers with simple occupation (agriculture, laborer and housewife) are poor, so they like to visit health center service. This relationship was confirmed by p-value 0.028.

5.4 The association between the type of health service and mother's education when theirs child's illness is mild

Corresponding with the main occupation of mother as discussed above, mother's education in primary school selected to go to health center at 31.06 percent. And this is highest percentage of this group. For those with secondary school and higher, they go to drug store at 27.93 percent and go to government hospital at 24.32 percent. The details were in Table 24, p-value = 0.037.

5.5 The association between the type of health service and family composition of mothers when theirs child's illness is mild

At the highest proportion, all of three groups of family composition have the same choice (Table 25), which means that they don't need the treatment from physician , 25.19 percent for first group (husband + wife + child/ children), 31.45 percent for the second group (Parents + husband + wife + child/ children) and the last group (other) at 38.46 percent. When theirs child's illness is mild, they can treat them-self or they go to drug store, so the mothers can reduce the expenditure.

5.6 The association between the type of health service and income of mother's family when theirs child's illness is mild

When family's income of mother is high, the highest percentage mothers (28.72%) go to government hospital for the mild illness of theirs child (Table 26). When the family is poor, they may be not have theirs own vehicles or they want reduce the total cost for treatment, their practice was "self treatment", at 37.04 percent. This factor has relationship with dependent variable.

5.7 The association between the type of health service and distance from mother's house to health care services when theirs child's illness is mild

Although the house is near private health service, the proportion of mothers selected its services is low, at 14.44 percent (Table 43). Instead, they go to health center or government hospital, mothers who live near public health service is that they selected "buy drug" at highest proportion 31.87 percent. Therefore, it can be stated that, for some reasons, in mild illness cases, most of mothers selected the lowest for treatment.

5.8 The association between the type of health service and mother's traveling time when theirs child's illness is mild

With the short and middle time of traveling, the drug store is a place where the majority of mothers selected the services. With the long time of traveling, mothers selected to take theirs children to health center (Table 28). On the whole, in all cases, most mothers feel that the time of traveling is convenient (93.75 percent) (Table 7).

Summary of discussion

Regarding mild illness cases, the factors that have the relationship with the type of health service listed below, 1) Attitude, 2) Main occupation, 3) Education, 4) Family composition, 5) Income of mother's family, 6) Distance from mother's house to health services, 7) Transportation and 8) Traveling time.

For a severe illness case, there are only two factors that are significant associated with the type of health service. They include: 1) Distance from mother's house to health services and 2) Traveling time.

In table 29 and table 30, majority of mothers (more than 70 percent) selected the health center or the government hospital for treatment. It demonstrates that when the treatment is necessary and urgently (severe illness), so the public health service is the best choice with the mothers having children under 5 years old in rural area.

CHAPTER 6

CONCLUSION AND RECOMMENDATION

6.1 Conclusion

This study emphasized on mother's utilization health service when theirs children get sick in Sakeo and Ta-kasem Sub-District, Muang District, Sakeo Province, Thailand. The data was collected among 272 mothers having children under 5 years old by training interviewers with constructed questionnaire. The research was performed to study the socio-demographic characteristics of mother's personal, attitude toward public health services, accessibility to health services and the child's illness level.

Method of simple sampling was employed with 272 respondents who met the criteria. For statistical analysis, descriptive was used to show frequencies, percentages, mean, min, max and standard deviation. Chi-square analysis applied to measure the relationship between type of health service and predisposing factors (socio-demographic characteristics, attitude and knowledge), enabling factors (poverty characteristics, distance and transportation) and need factor (child's illness level). Binary logistic regression examines the potential strength of the selected factor when the influence of other factors is controlled.

Based on the results of the study and interpretation, the conclusion could be made as follow:

1. The age of total 272 respondents were divided into five groups, with the mean age of 32 years. Majority of them have the duration of residence over five years at 85.66 percent.

2. In terms of occupation, respondents who worked as housewife were taking the largest proportion (35.29 percent). Among educational distribution of the mothers, most of them got primary school (51.19 percent).

3. Concerning the family income, 55.51 percent family is sufficient and no saving, followed by family is sufficient and having saving and family is not sufficient, 34.56 percent and 9.93 percent.

4. In terms of distance from house to health care services, 66.91 percent the mothers live near public health care about mean of 7.28 km; 33.09 percent who live near private health care about mean of 10.4 km. The traveling time to health care from their residence is average 25 minutes.

5. Related to mother's attitude, there was significantly associated with type of health services in mild illness case, with statistically p-value = 0.003.

6. Regarding the mother's knowledge, there was relationship with use or not use public health service, because p-value = 0.003

7. There were significantly associated between: main occupation, education, family composition, income of mother's family, distance from mother's house to health services, transportation, traveling time and type of health services in mild illness cases.

8. In severe illness cases, two factors: distance from mother's house to health services and traveling time were associated with kinds of health services.

6.2 Recommendations

According to the result of this study, there are some recommendations for improvement the quality service of public health care.

6.2.1 Recommendation for Implementation

1. Attitude toward public health services are strongly related to the type of health services. 23.16 % and 54.78 % agree on the question, i.e., to wait for a long time more than private health services, when they went to public health services. It is therefore to recommend that management of health service and improvement the manpower should be increased.

2. To develop the different type of insurance for increasing the quality of drug because the mother answer that the quality of drug in private health service is better than public health service at 16.18 % strongly agree and 42.65 % agree.

3. Around 15 percent of mothers don't know or not sure about the office hours of the public health services. Health worker personnel and village health volunteers should improve the information about the basic public health services, i.e. opening time, health programs.

4. In group with poor knowledge, the percentage of not use public health service higher than whose have fair or good knowledge, 23.81 percent compare with 6.71 and 7.58 percent. The local committee and the health department office should increase the socio-economic and cultural of the people.

5. When the child's illness is mild, the first method for treatment of mothers is 18.38 percent for self treatment and 27.21 percent for going to drug store. So, it should make know to everyone about the diagnosis and basic treatment of the simple diseases to avoid the bad consequences.

6.2.2 Recommendation for future study

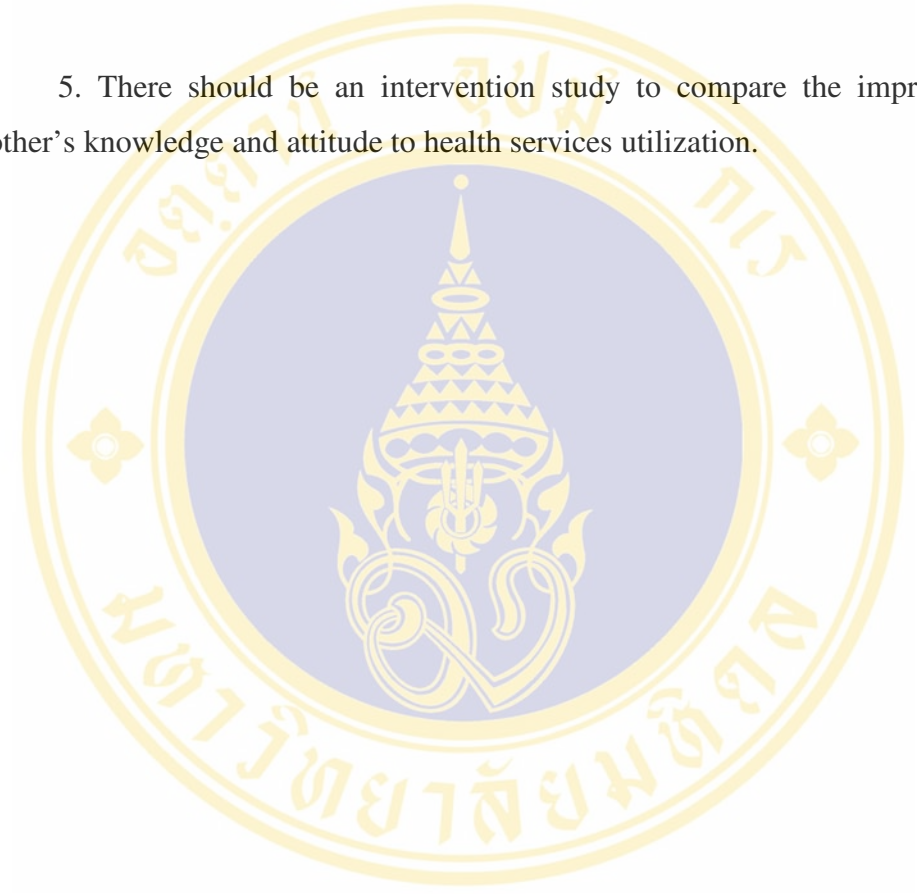
1. For knowledge factors, there should be further study to ask mothers about their knowledge on prevention and primary treatment for mild common diseases.

2. There should be a study conducted both in rural and urban areas in order to compare whether there is a difference of health services utilization between two areas.

3. There should be a study conducted throughout the district with bigger samples in order to gain results with more reliability.

4. There should be a study conducted in two seasons to investigate whether season factors affect mother's choice of health services utilization.

5. There should be an intervention study to compare the improvement of mother's knowledge and attitude to health services utilization.



REFERENCES

1. Alma-Ata 1978. Primary Health Care. Geneva, WHO, 1978 ("Health for All" Series, No.1) Available from: http://www.sti.ch/fileadmin/user_upload/Pdfs/swap/swap156.pdf [Accessed 2005 Sep 25]
2. Donna C. Bird, David Lambert, David Hartley, Peter G. Beeson, Andrew F. Coburn. Integrating Primary Care And Mental Health Services In Rural America: A Policy Review And Conceptual Framework Maine Rural Health Research Center Edmund S. Muskie Institute of Public Affairs University of Southern Maine 96 Falmouth Street Portland, Maine 04103. Available from: http://muskie.usm.maine.edu/Publications/rural/wp03.pdf [Accessed 2005 Oct 03]
3. Keith G. Provan, H. Brinton Milward. A preliminary theory of interorganizational network effectiveness: a comparative study of four community mental health systems. Administrative Science Quarterly, March, 1995. Available from: http://www.findarticles.com/p/articles/mi_m4035/is_n1_v40/ai_17184150 [Accessed 2005 Sep 25]
4. Arons et al 1994; Christianson AND Moscovice 1993. Zimmerman and Wienckowski 1991/ RURAL MODELS FOR INTEGRATING PRIMARY CARE, MENTAL HEALTH, AND SUBSTANCE ABUSE TREATMENT SERVICES. Available from: https://muskie.usm.maine.edu/Publications/rural/wp05.pdf [Accessed 2005 Sep 26]
5. Bird DO, Lambert DA, Hartley DA, Peter G. Beeson PE , Coburn AN. Rural Models for Integrating Primary Care, Mental Health, and Substance Abuse Treatment Services. Available from: https://muskie.usm.maine.edu/Publications/rural/wp05.pdf [Accessed 2005 Oct 9]

6. James R. Cooper, Dorynne J. Czechowicz, Stephen P. Molinari. Division of Clinical Research National Institute on Drug Abuse. Available from : http://72.14.203.104/search?q=cache:Bi4N4lFfQMwJ:www.drugabuse.gov/pdf/ +problems+in+rural+areas%22&hl=en&ct=clnk&cd=1&client=firefox-a [Accessed 2005 Oct 9]
7. WIENKE G. W. BOERMA and PETER F. M. VERHAAK. Netherlands Institute for Primary Health Care (NIVEL), Utrecht, The Netherlands. The general practitioner as the first contacted health professional by patients with psychosocial problems: a European study. Available from: http://journals.cambridge.org/action/displayAbstract?fromPage=online&aid = 26341 [Accessed 2005 Oct 12]
8. Bird D.C, Lambert D., Hartley D., Beeson P.G., Coburn A.F. Administration and Policy in Mental Health, Volume 25, Number 3, January 1998, pp. 287-308(22) Publisher:Springer. Rural Models for Integrating Primary Care and Mental Health Services. Available from: http://www.ingentaconnect.com/content/klu/apih/1998/00000025/00000003/00414639 [Accessed 2005 Sep 20]
9. Health Care and Social Services in China, Japan and Thailand 5 ECTS . Available from: http://w3.whosea.org/EN/Section313/Section1525_6896.htm. [Accessed 2005 Sep 20]
10. Thailand. Ministry of Public Health. Thailand health profile 1999-2000. Available from: www.wpro.who.int/NR/rdonlyres/E05D7806-C610-4E53-A839-B1F22C6B6A67/0/thailand_ehcp_18Nov2004.pdf [Accessed 2005 Sep 28]
11. Country health profile Thailand 2001. Availabled from : http://w3.whosea.org/cntryhealth/thailand/thaistatus.htm [Accessed 2005 Sep 21]
12. Saieef Uddin Yeahia. Study on factors affecting the use of oral rehydration therapy by mothers in diarrhoeal disease of under five years children in Kanchanaburi provincecial hospital, Thailand [Master of Primary Health Care Management]. Nakhon Pathom: Faculty of Graduate Studies, Mahidol University; 1998.

13. Asian Development Bank. ADB Policy for the Health Sector. Available from: http://www.asiandevbank.org/Documents/Reports/Evaluation/sst-reg-2005-04.pdf. [Accessed 2006 Jan 12]

14. Philippines is failing to reduce infant death rate. Sunday, August 07 2005 @ 08:11 PM BST. Available from: http://www.bayanihan.org/html/article.php/20050807201118761 [Accessed 2006 Jan 12]

15. ADB study says RP failing to reduce infant death rate. Available from: http://www.manilatimes.net/national/2005/aug/08/yehey/metro/20050808met8.html [Accessed 2006 Jan 20]

16. Wibulpolprasert S., editor. *Thailand health profile: 2001-2004.* Available form : http://www.moph.go.th/ops/health_48 [Accessed 2006 Jan 20]

17. SITTHI-AMORN C, CHUNHARAS S. CHOOPRAPAWAN C. ENHR Development in Thailand. Available from: cohred.org/cohred/content/105.doc

18. Sermsri S. Changes in health care utilization in Thailand. Chiang Mai University Journal. 2002. Available from: http://cmuj.chiangmai.ac.th/cmuj&month=5&year=2002.htm [Accessed 2006 Feb 3]

19. Pinyuchon M, Gray Lizbeth A. . Understanding Thai Families: A Cultural Context for Therapists Using a Structural Approach. Contemporary Family Therapy. Netherlands: Springer [Online]. 1997 Jun; 19(2): 209-28. Available from: http://www.springerlink.com/ [Accessed 2006 Feb 5]

20. Sermsri S, Vorakitphokatorn S. Gender and Health: Some Asian evidence. Available from: http://www.jstor.org/view/00221465/di976121/97p0208x/0 [Accessed 2005 Nov 8]

21. Lyttleton Chris. Health and development: knowledge systems and local practice in rural Thailand. Anthropology Department, University of Sydney, Australia. Available from: http://htc.anu.edu.au/pdfs/Lyttlet1.pdf. [Accessed 2005 Nov 8]

22. Abbatt F, McMahon R. Teaching Health-Care Workers: A Practical Guide, London: MacMillan Education; 1985.

23. International Conference on Health Research for Development. Conference Report. Bangkok 10-13 October 2000. Available from: http://www.who.int/entity/rpc/meetings/BKK2000Report.pdf. [Accessed 2005 Dec 5]

24. Pham Le Tuan. Patterns of health service utilization of villagers in a rural area, Chantaburi province [M.P.H.M. Thesis in Primary Health Care Management]. Nakhon Pathon: Faculty of Graduate Studies, Mahidol University; 1995.

25. Banchongphanith D. Utilization of health center service among the villagers in rural areas of Khonkaen province. [M.P.H.M. Thesis in Primary Health Care Management]. Nakhon Pathon: Faculty of Graduate Studies, Mahidol University; 2005.

26. Thailand's Country Profile on Pesticide Poisonings. Available from: www.nihs.go.jp/GINC/meeting/7th/7profile/thai-sl.pdf [Accessed 2005 Dec 18]

27. The lecture "Precede/ Proceed Model" of University of South Florida. Available from: http://www.umanitoba.ca/centres/mchp/projects/cphi/website/external_docs/lit_review/cphi_definitions.shtml [Accessed 2005 Dec 18]

28. Wibulpolprasert S., editor. *Thailand health profile 1999-2000.* Bangkok: Express Transportation Organization Printing House; 2002. Available from: http://w3.whosea.org/cntryhealth/thailand/thfEnglish.htm [Accessed 2006 Feb 17]

29. Pachanee C, Wibulpolprasert S. Dual Track Health Policies: In-coherence between the Policy on Universal Coverage of Health Insurance and the Policy on Trade in Health Services in Thailand [CDROM]. Available from: www.globalforumhealth.org/Forum8/Forum8 CDROM/Posters/Pachanee %20C%20F8-583.doc

APPENDIX

APPENDIX A

INTERVIEW QUESTIONNAIRE

HEALTH SERVICES UTILIZATION AMONG MOTHERS OF CHILDREN UNDER 5 YEARS OLD IN MUANG DISTRICT OF SAKEO PROVINCE, THAILAND

This questionnaire is prepared for thesis writing for MPHM course at the ASEAN Institute for Health Development, Mahidol University. Your answer will be kept in secret and not exposed to any other purpose.

Date of interview _____

Name of interviewee _____

Household number _____

Name of village_____

Name of sub-district _____

Inclusion criteria:

- Mothers of children under 5 years old.
- Live at least one year in Muang district of Sakeo province.
- Children had illness in past one year.

PART A. Socio-demographic characteristics

Please put a tick (✓) in the appropriate box to mark your answer the question (choose one for each question)

A.1. How old are you? _____ years old (completed year)

A.2. How long do you stay here?

1. One year ❑

2. More than one year to five years ❑

3. More than five years ❑

A.3. What is your main occupation (main income earned from the occupation)?

1. Agriculture ❑ 3. Housewife ❑

2. Laborer ❑ 4. Government employee ❑

5. Private employee ❑

6. Own business (self employed) ❑

7. Other (specify) _____

A.4. What is your education obtainment?

1. No education ❑ 5. Diploma ❑

2. Primary ❑ 6. Bachelor ❑

3. Secondary/high school ❑ 7. Master ❑

4. Vocation ❑

A.5. Marital status

1. Married ❑ 3. Divorced ❑

2. Widowed ❑ 4. Separated ❑

A.6. How many members do you have presently in your family now? ____ person (s)

1. Husband + wife + child/children ❑

2. Husband + wife + parents + child/children ❑

3. Wife + child/children ❑

4. Other _____

A.7. How many children with age of under 5 years currently living with you now?

_____ person (s)

PART B. Attitude toward public health services

Please put a tick (✓) in the answer which it is appropriate in your opinion

No.	Questions	Strongly agree	Agree	Don't know/ not sure	Disagree	Strongly disagree
B.1	Medicine in public health service is more effective than private health service					
B.2	Public health care provides some free services					
B.3	Public health service gives a long waiting time more than private health service					
B.4	Personnel of public health service pay attention and listen to you about your health problems					
B.5	When you go to public health service the health personnel are always absent					
B.6	The quality of drug in private health service is better than public health service					
B.7	Public health service is clean					
B.8	Public health service has good environment					
B.9	Public health service's medical equipment are modern					
B.10	Public health service has drug enough for treatment					
B.11	Public health service has medical equipment enough for treatment					
B.12	You can not trust treatment from health personnel of public health service					
B.13	You can not trust diagnosis from health personnel of public health service					
B.14	Public health service location is not appropriate for your village					
B.15	Public health service can provide only treatment for simple illness and injury					

PART C. Knowledge toward general health services

Please put a tick (✓) in the answer which it is appropriate in your opinion

No.	Questions	Yes	Not sure	No
C.1	There are always doctors at private health service			
C.2	There are enough dentists at private health service			
C.3	There are specialized doctors at private health service			
C.4	Private health service has an X-ray			
C.5	Private health service has got ECG for treatment			
C.6	Private health service has got CT for service			
C.7	Office hours of the public health service is 8:30 – 16:30			
C.8	Office hours of the private health service is 8:30 – 16:30			
C.9	Public health service offers an immunization for children under 5 years old			
C.10	Public health service has an MCH and Family planning services			
C.11	There is a 30 baht program in public health service			
C.12	There is a 30 baht program in private health service			

PART D. Enabling factors

Please put a tick (✓) in the answer which it is appropriate in your opinion

D.1. Your income is sufficient for family's expense?

1. sufficient and having saving ❑
2. sufficient and no saving ❑
3. not sufficient ❑

D.2. What is your type of residence?

1. own house ❑
2. rental house ❑
3. other _____

D.3. What do you think about your economic status when compare with your neighbors?

1. rich ❑
2. moderate ❑
3. poor ❑

D.4. Your house is near public health care or private health care: (please, select one)

1. Public health care ❑. How far? _____ km
2. Private health care (i.e drug store, clinic) ❑. How far? _____ km

D.5. How do you go to that place (from question D.4) in case you want to go?

1. Walking ❑
2. your own vehicle ❑
3. Public car ❑
4. Other (specify) _____

D.6. How much time you spend for that traveling? (one way) ___ hours _____ (minutes)

D.7. From the answer of question D.6, it is convenient for you?

1. No ❑
2. Yes ❑

D.8. How much do you pay for that transportation in cost? (specify) _____ Baht

D.9. From the answer of question D.8, this cost is suitable for you?

1. No ❑
2. Yes ❑

PART E. NEED FACTORS

Please put a tick (✓) in the answer which it is appropriate in your opinion

E.1. Was there any child under 5 years old in your family get sick in past one year?

1. No ❑
2. Yes ❑

E.2. Whom the child who had illness the latest? _____ years old

E.3. What kind of health service was used by this child?

1. Public health care ❑.
2. Private health care (i.e drug store, clinic) ❑.

E.4. If the child's illness is mild, what do you do first?

1. self treatment ❑
2. buy drug from drug store ❑
3. go to health center ❑

4. go to private clinic ❑

5. go to government hospital ❑

6. go to private hospital ❑

7. traditional healer treatment ❑

8. other (specify) _____

E.5. Why do you choose that facility?

No.	Questions	5 = Strongly considered	4 = considered	3 = moderate	2 = a bit considered	1 = never considered
1	Short traveling time					
2	Cost of traveling					
3	Short waiting time					
4	Quality of reception					
5	Hour care of service					
6	Severity of your children illness					
7	Health care provider's skill					
8	Feel comfortably with providers					
9	Cost of treatment					

E.6. If that symptom (from question E.4) still remains what would you do next?

1. self treatment ❑

2. buy drug from drug store ❑

3. go to health center ❑

4. go to private clinic ❑

5. go to government hospital ❑

6. go to private hospital ❑

7. traditional healer treatment ❑

8. other (specify) _____

E.7. If the child's illness is severe, what do you do first?

1. self treatment ❑

2. buy drug from drug store ❑

3. go to health center ❑

4. go to private clinic ❑

5. go to government hospital ❑

6. go to private hospital ❑

7. traditional healer treatment ❑

8. other (specify) _____

E.8. Why do you choose that facility?

No.	Questions	5 = Strongly considered	4 = considered	3 = moderate	2 = a bit considered	1 = never considered
1	Short traveling time					
2	Cost of traveling					
3	Short waiting time					
4	Quality of reception					
5	Hour care of service					
6	Severity of your children illness					

No.	Questions	5 = Strongly considered	4 = considered	3 = moderate	2 = a bit considered	1 = never considered
7	Health care provider's skill					
8	Feel comfortably with providers					
9	Cost of treatment					

E.9. In the one year, how often do your children select public health service for treatment?

1. never use ❑ (go to question E.11)
2. ever use one time ❑
3. ever use two times ❑
4. ever use more than two times ❑

E.10. Please specific what was the public health service from question E.9:

1. health center ❑
2. government hospital ❑
3. other (specify) _____

E.11. If you choose never use from question E.9, why?

1. Don't trust treatment from health personnel ❑
2. It is inconvenient to go to health center ❑
3. Your relatives or neighbors suggest you to go to other health services ❑
4. Other (specify) _____

THANK YOU

APPENDIX B
TABLES

Table 33 Number and percentage of mothers classified by mother's method for first treatment when their child's illness is severe.

Statement	Severe illness First method for treatment N (%)
Self treatment	0
Buy drug from drug store	1 (0.37)
Go to health center	11 (4.04)
Go to private clinic	35 (12.87)
Go to government hospital	219 (80.51)
Go to private hospital	6 (2.21)
Traditional healer treatment	0
Other	0

Table 34 Number and percentage of mothers classified by reasons for not used public health service.

Reasons for not used public health service	Number	Percent
Don't trust treatment from health personnel	2	7.69
It is inconvenient to go to health center	8	30.77
Your relatives or neighbors suggest you to go to other health services	2	7.69
Other	14	53.85

Table 35 Number and percentage distribution of mothers classified by level of relationship between some factors and mother's method for treatment when their child's illness is mild.

No.	Questions	Total of respondents (N=272)				
		Strongly considered (%)	Considered (%)	Moderate (%)	a bit considered (%)	Never considered (%)
1	Short traveling time	90 (33.09)	70 (25.74)	59 (21.69)	30 (11.03)	23 (8.46)
2	Cost of traveling	53 (19.49)	93 (34.19)	53 (19.49)	37 (13.60)	36 (13.24)
3	Short waiting time	80 (29.41)	78 (28.68)	65 (23.90)	26 (9.56)	23 (8.46)
4	Quality of reception	66 (24.26)	76 (27.94)	74 (27.21)	29 (10.66)	27 (9.93)
5	Hour care of service	67 (24.63)	79 (29.04)	68 (25.0)	30 (11.03)	28 (10.29)
6	Severity of your children illness	88 (32.35)	77 (28.31)	73 (26.84)	22 (8.09)	12 (4.41)
7	Health care provider's skill	76 (27.94)	83 (30.51)	63 (23.16)	27 (9.93)	23 (8.46)
8	Feel comfortably with providers	65 (23.90)	86 (31.62)	60 (22.06)	40 (14.71)	21 (7.72)
9	Cost of treatment	65 (23.90)	70 (25.74)	62 (22.79)	23 (8.46)	52 (19.12)

Table 36 Number and percentage distribution of mothers classified by level of relationship between some factors and mother's method for treatment when their child's illness is severe.

No.	Questions	Total of respondents (N=272)				
		Strongly considered (%)	Considered (%)	Moderate (%)	a bit considered (%)	Never considered (%)
1	Short traveling time	78 (28.68)	73 (26.84)	83 (30.51)	32 (11.76)	6 (2.21)
2	Cost of traveling	59 (21.69)	77 (28.31)	83 (30.51)	36 (13.24)	17 (6.25)
3	Short waiting time	69 (25.37)	89 (32.72)	58 (21.32)	46 (16.91)	10 (3.68)
4	Quality of reception	64 (23.53)	79 (29.04)	78 (28.68)	36 (13.24)	15 (5.51)
5	Hour care of service	70 (25.74)	97 (35.66)	70 (25.74)	18 (6.62)	17 (6.25)
6	Severity of your children illness	109 (40.07)	115 (42.28)	36 (13.24)	10 (3.68)	2 (0.74)
7	Health care provider's skill	101 (37.13)	106 (38.97)	55 (20.22)	9 (3.31)	1 (0.37)
8	Feel comfortably with providers	79 (29.04)	73 (26.84)	64 (23.53)	32 (11.76)	24 (8.82)
9	Cost of treatment	57 (20.96)	82 (30.15)	56 (20.59)	46 (16.91)	31 (11.40)

Table 37 Demand and the health seeking behavior of mothers when their child 's illness is mild.

No.	Questions	Self treatment + Buy drug + Go to private clinic	Go to health center + Go to government hospital	p-value
	N = 272	153	119	
1	Short traveling time	3.45 ± 1.38	3.88 ± 1.08	0.002
2	Cost of traveling	3.09 ± 1.35	3.63 ± 1.15	0.005
3	Short waiting time	3.47 ± 1.34	3.78 ± 1.05	0.001
4	Quality of reception	3.11 ± 1.36	3.89 ± 0.90	0.00
5	Hour care of service	3.20 ± 1.41	3.80 ± 0.93	0.00
6	Severity of your children illness	3.52 ± 1.24	4.06 ± 0.86	0.00
7	Health care provider's skill	3.29 ± 1.34	3.98 ± 0.92	0.00
8	Feel comfortably with providers	3.24 ± 1.29	3.81 ± 1.04	0.001
9	Cost of treatment	3.01 ± 1.43	3.59 ± 1.31	0.009

Table 38 Demand and the health seeking behavior of mothers when their child 's illness is severe.

No.	Questions	Self treatment + Buy drug + Go to private clinic	Go to health center + Go to government hospital	p-value
	N = 272	42	230	
1	Short traveling time	*	*	*
2	Cost of traveling	3.42 ± 1.23	3.46 ± 1.13	0.11
3	Short waiting time	4.21 ± 0.81	3.47 ± 1.16	0.005
4	Quality of reception	3.92 ± 0.94	3.44 ± 1.16	0.059
5	Hour care of service	3.88 ± 1.19	3.64 ± 1.09	0.349
6	Severity of your children illness	*	*	*
7	Health care provider's skill	*	*	*
8	Feel comfortably with providers	4.02 ± 1.11	3.46 ± 1.27	0.054
9	Cost of treatment	2.61 ± 1.60	3.45 ± 1.18	0.00

Table 39 Association between the kind of health services and selected factors when child's illness is severe.

Age group	**Number**	**Percent**	**$\chi 2$**	**p-value**
< 30 years	127	46.69	0.51	0.774
30-39 years	104	38.24		
40 + years	41	15.07		
Duration				
1-4 years	39	14.33	3.70	0.054
5 + years	233	85.67		
Main occupation				
Agriculture	44	16.18	5.50	0.139

Table 39 Association between the kind of health services and selected factors when child's illness is severe (cont.)

Age group	Number	Percent	χ2	p-value
Main occupation				
Laborer	54	19.85		
Housewife	96	35.29		
Other	78	28.68		
Education				
Primary school	161	59.19	0.002	0.962
Secondary school and higher	111	40.81		
Marital status				
Married	259	95.22	0.61	0.435
Separated	13	4.78		
Family composition				
Husband + wife + child/children	135	49.63	0.66	0.718
Husband + wife + parents + child/children	124	45.29		
Other	13	4.78		
Income				
Sufficient and having saving	94	34.56	1.53	0.463
Sufficient and no saving	151	55.51		
Not sufficient	27	9.93		
Method of transportation				
Your own vehicle	217	79.78	1.09	0.295
Other	55	20.22		
Attitude				
High attitude (> 59.65 score)	37	13.61	3.46	0.177
Moderate attitude (47.79 score to 59.65 score)	193	70.95		
Low attitude (< 47.79 score)	42	15.44		

Table 39 Association between the kind of health services and selected factors when child's illness is severe (cont.)

Knowledge				
Good knowledge (> 19.94 score)	66	24.26	0.93	0.627
Fair knowledge (14.70 score to 19.94 score)	164	60.29		
Poor knowledge (< 14.70 score)	42	15.45		

Table 40 Association between health service types and age of mother whose children under 5 years old with mild illness.

Age group	**Total (N)**	**Self treatment (%)**	**Buy drug (%)**	**Go to health center (%)**	**Go to private clinic (%)**	**Go to government hospital (%)**	**χ2**	**p-value**
< 30 years	127	23 (18.11)	41 (32.28)	29 (22.83)	13 (10.24)	21 (16.54)	7.99	0.43
30-39 years	104	21 (20.19)	27 (25.96)	25 (24.04)	9 (8.65)	22 921.15)		
40 + years	41	6 (14.63)	6 (14.63)	13 (31.71)	7 (17.07)	9 (21.95)		

Table 41 Association between health service types and duration of residence of mothers whose children under 5 years old with mild illness.

Duration	**Total (N)**	**Self treatment (%)**	**Buy drug (%)**	**Go to health center (%)**	**Go to private clinic (%)**	**Go to government hospital (%)**	**χ2**	**p-value**
1-4 years	39	7	18	7	3	4	9.08	0.059
5 + years	233	43	56	60	26	48		

Table 42 Association between health service types and marital status of mother whose children under 5 years old with mild illness.

Marital status	Total (N)	Self treatment (%)	Buy drug (%)	Go to health center (%)	Go to private clinic (%)	Go to government hospital (%)	χ2	p-value
Married	259	46	71	66	27	49	3.12	0.52
Separated	13	4	3	1	2	3		

Table 43 Association between health service types and distance from mother's house to health care services when their child's illness is mild.

House	Total (N)	Self treatment (%)	Buy drug (%)	Go to health center (%)	Go to private clinic (%)	Go to government hospital (%)	χ2	p-value
Near public health care	182	31 (17.03)	58 (31.87)	38 (20.88)	16 (8.79)	39 (21.43)	11.42	0.022
Near private health care	90	19 (21.11)	16 (17.78)	29 (32.22)	13 (14.44)	13 (14.44)		

BIOGRAPHY

NAME Phung Quang Vinh

DATE OF BIRTH Dec 3rd, 1967

PLACE OF BIRTH HoChiMinh city, VietNam

INSTITUTION ATTENDED Medicine and Pharmacy University
HoChiMinh city
Medical doctor graduated 1997

Master of Primary Health Care Management
ASEAN Institute for Health Development
Mahidol University
2005-2006

FELLOWSHIP/RESEARCH GRANT Japan International Co-operation Agency
Thailand International Development
Co-operation Agency (TICA/JICA)

PRESENT POSITION Chief of Statistical Section
Planning and Financing Department
Preventive Medicine Center of HoChiMinh city