

# CHAPTER I



## INTRODUCTION

### 1. Background and Rationale

#### Global and regional situation of DHF (WHO SEARO, 1995)

In the past 15 years, there has been an increase in the incidences of Dengue and its severe manifestations, such as Dengue Hemorrhagic Fever (DHF), and Dengue Shock Syndrome (DSS). More than 2.5 billion people are at risk of infection in over 100 countries worldwide. There are about tens of millions of dengue cases each year and at least five hundred thousand of them died, constituting a mortality of about five percent in most countries; the vast majority of cases, at least 95 percent, are among children of less than 15 years of age. The WHO has described DHF as a new emerging infectious disease.

Clearly, this infection is of major public health importance. In many countries of South East Asia, DHF has become the leading cause of hospitalization and death among children. It has also been causing an economic burden on these countries and their people. In addition, it is continuing to spread geographically within the region and its incidences are now increasing.

The epidemic of DHF was first recognized in Thailand in 1958 and it has been continuously occurring up to the present. It can be clearly seen that after the occurrence of the epidemic in 1998, it has spread throughout the country. The numbers of the patients diagnosed with DHF in 1998, was 127,189 cases (209.14 per 100,000 population). Of these cases, 434 cases deaths (0.34 percent mortality rate) from the disease were recorded. In 1999, the reports showed 24,943 patients (40.58 per 100,000 population) with a 0.23 percent mortality rate (Division of Epidemiology, Ministry of Public Health, 1999: 1). The number of the patients in 2002 was 16,285 (25.91 per 100,000 population), with 30 cases of death, with a 0.18 percent mortality rate (Division of Epidemiology, Ministry of Public Health, 2001:1). In 2001, there were 139,327 cases (225.16 per 100,000 population), 245 deaths, and a 0.18 percent mortality rate (Division of Epidemiology, Ministry of Public Health, 2001:1). And, in 2002, 108,905 cases (202.94 cases per 100,000 population), 172 deaths, and a 0.16 percent mortality rate (Division of Epidemiology, Ministry of Public Health, 2003: 1)

Nakohn Si Thammarat Province in Thailand in the years 1997-2001 has prevalence rates per 100,000 population as 46.43, 634.49, 10.12, 7.8, and 276.29, respectively. In the most recent year, 2002, the prevalence rate of 471.33 per 100,000 population can be divided into the following: the highest number of cases, 1936, was seen in the age group between 10 – 14 years (1,446.42 per 100,000 population), followed by the age group of 5 – 9 years with 1,704 cases (1,308/100,000 population), and finally in the age group of 0 – 4 years with 627 cases (633/100,000 population). These data indicate that the majority of patients is in the school age group between 5 – 14 years old, which is 3 fold higher than other groups compared the same period of

time (Epidemiology Unit, Provincial Health officer, Nakohn Si Thammarat, 2002). Considering the severity of the disease in 2002, in Nakohn Si Thammarat Province, the number of deaths was 14 cases (0.29% morbidity rate), of which the majority group was between 5 – 9 years of age (8 cases, 0.47 % mortality rate).

In 2002, the number of cases in Chulaporn, Nakohn Si Thammarat District was 50 (163.19 per 100,000 population). The majority age group was between 5 – 14 years of age (42 cases). The disease did not only cause illness and death in the children, but also directly impacted the absence from school and excess worrying, loss of time on the job, and monetary costs from their parents. Some studies show the expenditure rate per admitted case, for 3 days with DHF, was around 3,000 Baht (Kumnuan Aeoungchoosak, 1989: 277-281). Furthermore, the government has spent large expenditure for treatment and care to control the disease (WHO; 1977:5, cited in Poonsook, 2002)

From Epidemiology studies, the epidemic of DHF needs the following 3 components: cause of the disease (agent), human, and environment. Therefore, if these 3 components suitably have in a certain community, the epidemic of DHF will be seen. Since the DHF cannot be brought to a halt, prevention and control methods should be used, the management of human, the environment and the Aedes mosquito (Department of Communicable Diseases Control, 1993: 23–24). The activities should focus on human preventive behaviors or avoiding mosquito bites and a control of the Aedes vector. This strategy agrees with Suphamit Chunhasutiwat, 1994 in the success of prevention and control of DHF by controlling of breeding sites through stimulating the

community to cooperate. This technique is shown to be effective and sustainable and if continuously practiced. The epidemic of DHF according to Ong-arg Chareonsook (1995: 6) found that the disease could occur throughout the year in Thailand and increase in the rainy season, especially during June through August every year. Therefore, it can be said, this is a seasonal variation disease.

The epidemic mainly occurred in children between the ages of 5–9 years, followed by children below 5 years of age. The study stated that the *Aedes* mosquito usually bite during the hours of 9.00–11.00 and 13.00–14.00 (Department of Disease Control, 1993: 4-18) and the disease can infect people during these times. The study of Yongyut Wangroongsub (1996: 402) found that the most infected cases were school children staying in the school because of the school time of May through September every year.

The methods for prevention and control of DHF in the past in Nakohn Si Thammarat Province, Chulaporn District has been a joint project of the Ministry of Public Health and the Ministry of Education on National DHF campaigns in all primary schools. The goal was to reduce DHF morbidity among students. The implementations of the plans to prevent and control DHF were done at all levels, from the provincial to the village levels. Cooperation from various agencies within the community was set up, especially the support of schools, such as the “Home, Community, and School Free From *Aedes* Mosquito” project.

Even though many projects were done, breeding sites were reported in the school. The larva index, Container Index (C.I.) at 8 schools of 4 school groups, Chulaporn District, Nakohn Si Thammarat Province during May through December 2002 was 27.6%. This is a very high rate as it should be not more than 10%.. This result conforms to the morbidity rate in DHF that is still high. In the beginning, this epidemic was investigated and it was found that the factors contributing to epidemic were prevention and control processes lack of continuous as a result of lacking accurate knowledge and resources; bad attitudes; lack of motivation, or some factors relevant to preventive and control behaviors against DHF.

Referring to the background and the principal problem, the disease cannot be totally eradicated, the best way is to promote prevention and control behaviors among children. Therefore it is essential to study the preventive and control behaviors of the school age children and also relevant factors that can support or stop these behaviors. The PRECEDE framework was used in analyzing the factors influencing preventive and control behaviors against DHF in school age children. Results from this study can be used in planning to promote proper preventive and control behaviors against DHF and lead to a quality population in the future.

## **2. Research Questions**

1. What are the preventive and control behaviors against Dengue Hemorrhagic Fever of primary school children in Chulaporn District, Nakohn Si Thammarat Province?

2. What are the factors that associated with DHF's preventive and control behaviors of primary school children?

### **3. Objectives of the Study**

#### **3.1 General Objective**

To study preventive and control behaviors against DHF and related factors, of primary school children in Chulaporn District, Nakohn Si Thammarat Province.

#### **3.2 Specific objectives**

1. To describe preventive and control behaviors against DHF of 4<sup>th</sup> - 6<sup>th</sup> grade primary school children in Chulaporn District, Nakohn Si Thammarat Province.
2. To examine the association between socio-demographic characteristics of primary school children and parents, knowledge about DHF, attitude towards DHF, sufficiency of resources for prevention and control of DHF, social support from parents and teachers in the prevention and control of DHF on one hand, and preventive behaviors against DHF of primary school children on the other.

### **4. Operational Definitions**

#### **Primary school children**

Refers to children who study in the 4th-6th grade in primary school under the Department of Primary Education, Chulaporn District, Nakohn Si Thammarat Province, in the academic year 2003.

**Knowledge about DHF**

Refers to the knowledge that the children gained through experiences about the cause, transmission, prevention and control of DHF.

**Attitude towards DHF**

Refers to the feelings of the children with regards to preventive and control behaviors against DHF.

**Preventive and control behaviors against DHF**

Refers to the actions that can prevent the occurrence of DHF consisting of the observation habitat of larvae of *Aedes aegypti*, elimination breeding site, elimination larvae of *Aedes aegypti* and avoiding mosquito bite.

**Resource for the prevention and control of DHF**

Refers to methods that are utilized for preventing DHF, comprising of mosquito nets, covers for water containers and abate sand put in water containers. The availability of sufficient of resources for the prevention of DHF, means there is an adequate number of mosquito nets, covers for water containers and Abate sand to put in water containers.

**Social support**

Refers to the children's perception of support from their teachers and parents with respect to emotion: praise, information, and utilities, including advice on preventive and control behaviors against DHF.

### **Accessing to information about DHF**

Refers to the frequency that children get information about DHF from person, namely teacher, health personnel. Mass media namely television, radio, newspapers. etc.

## **5. Scope of the Study**

This research was a cross-sectional study of behavior in the prevention and control against DHF of 4th – 6th grade primary school children in Chulaporn District, Nakohn Si Thammarat Province. Data were collected during the month of July, 2003 by using a self-administered questionnaire.

## **6. Expected Outcome and Benefits**

1. The results of the study can be used as guidelines for health workers and teachers in the promotion of children's preventive behaviors against DHF. This should result in appropriate preventive behaviors, with fewer occurrences of DHF.
2. The results of this study can be used as guidelines in the formulation of administrative policies on health professional education, leading to improved knowledge and understanding concerning factors related to children's preventive behaviors against DHF.
3. The results can also be used as guidelines in planning for more effective solutions to health problems concerning DHF that are appropriate and consistent with current situations.



4. The results of this study can be used as a springboard for further studies concerning the prevention of DHF.

## 7. Conceptual Framework

### INDEPENDENT VARIABLES

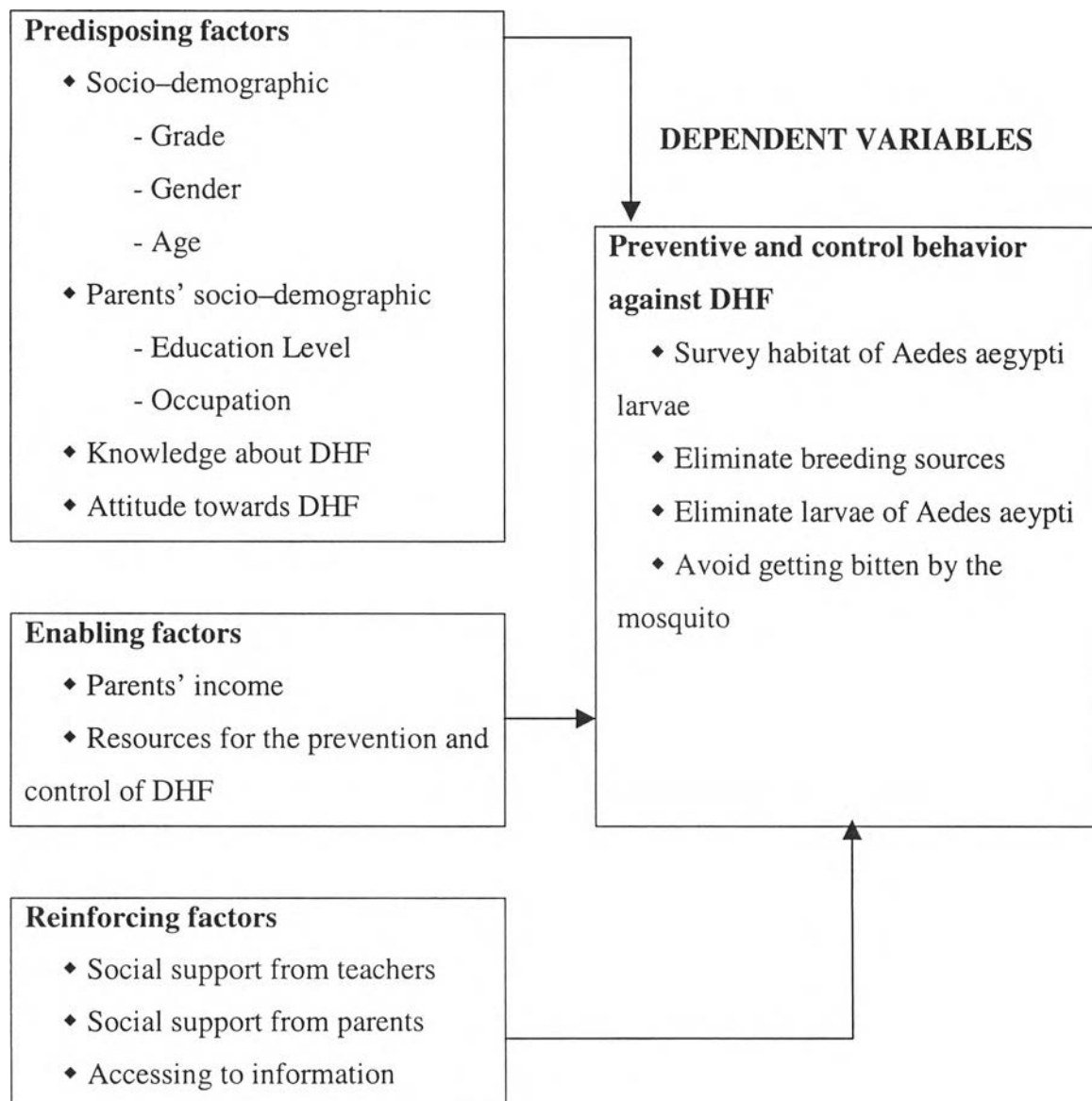


Figure 1 : Research conceptual framework