CHAPTER I

INTRODUCTION

This thesis reports on a descriptive study that investigated the Knowledge, Attitude and Practice level (KAP) of the residents in Male', the capital of Maldives regarding dengue fever prevention. Non-participant observation was used to examine the dengue fever prevention practices followed by the administration of a questionnaire to explore the participant's Knowledge, Attitude and Practice level. The purpose of this study was to identify the current level of the Knowledge, Attitude and Practice in people of Male' and the areas of deficit. The final report will be provided to the Ministry of Health, Maldives that will assist in the planning of preventive educational programs for the community in a suitable way.

This chapter briefly describes the context of the study, the purpose and significance of the study as well as the study question. It concludes with a discussion on the organization of this thesis.

1.1 Background and Significance

Dengue is a mosquito-borne infection that had become a major public health concern. It is a disease found in most tropical and subtropical areas of the world and had become the most common arboviral disease of human. Dengue fever and dengue hemorrhagic fever (DHF) are viral diseases transmitted by Aedes mosquitoes, usually Aedes aegypti. The four dengue viruses (DEN-1 through DEN-4) are

immunologically related, but do not provide cross-protective immunity against each other (Center for Disease Control [CDC], 2007).

1.1.1 Global Burden of Dengue Fever

Dengue virus is now believed to be the most common arthropod-borne disease in the world. The World Health Organization (WHO) currently estimated there might be 50 million cases of dengue infection worldwide every year. About 250,000 individuals per year manifest the severe forms, which have a mortality rate of about 10 percent. Given the dramatic geographic expansion of epidemic dengue fever (DF) and dengue hemorrhagic fever (DHF), the WHO has classified this disease as a major international public health concern.

1.1.2 Dengue in South East Asia Region

The health burden of dengue in South East Asia only is estimated to be 0.42 Disability Adjusted Life Years (DALYs) per 1,000 population (52% due to premature mortality, 48% due to morbidity (Shepard et al., 2004)). The global prevalence of dengue has grown dramatically in recent decades. Not only is the number of cases increasing as the disease is spreading to new areas, but explosive outbreaks are occurring as its epidemiological pattern is changing (Gubler, 1998).

"In 2003, only eight countries in South East Asia Region reported dengue cases. As of 2006, ten out of the eleven countries in the Region (Bangladesh, Bhutan, India, Indonesia, Maldives, Myanmar, Nepal, Sri Lanka, Thailand and Timor-Leste) reported dengue cases. Bhutan reported the first dengue outbreak in 2004. An outbreak with a high case fatality rate (3.55%) was first reported in Timor-Leste in 2005. The Democratic Peoples' Republic of Korea is the only country in this Region of WHO that has no report of indigenous transmission of DF/DHF. In 2006, most

countries reported increase in dengue cases (Bangladesh, Bhutan, Indonesia, Thailand, Maldives and Sri Lanka) whereas India, Myanmar and Timor-Leste reported slightly lesser cases than in 2005. Nepal reported dengue cases for the first time in November 2006 (WHO Regional Office for South-East Asia, 2007).

1.1.3 Dengue in Maldives

The first Dengue outbreak officially confirmed in Male' (the capital of Maldives) and in Eydhafushi and Dharavandhoo of Baa atoll was in May - June, 1979. Similar outbreaks were reported in Male' in March - April, 1983 and in April, 1988. However, the most serious outbreak occurred in 1988. During this outbreak a total of 2,054 cases with all types of manifestations; Dengue Fever (DF), Dengue Hemorrhagic Fever (DHF) and Dengue Shock Syndrome (DSS) were recorded. Out of the total 2,054 cases, 9 deaths were recorded (Male', Maldives, 2008). After a gap of ten years, outbreaks in 1998 and 1999 were reported with 1,750 and 1,835 cases, respectively. For the first time using commercial diagnostic kits, 81 cases of DF and 15 cases of DHF were detected during the 1998 outbreak, and 59 DF cases and 38 DHF cases were detected in the 1999 outbreak. Since 1979, dengue has become endemic in Maldives. A clinical based surveillance system exists in the country through which dengue situation is monitored daily. Through this daily surveillance, the recent outbreak of dengue was detected in October 2005, which reached a 10-fold increase in the number of cases in January and February, 2006. During October, 2005 to 31st December, 2006, a total of 3,393 cases including 10 deaths were reported with Case Fatality Rate (CFR) of 0.3%. The outbreak peaked in June, 2006 which was laboratory confirmed and dengue virus serotype DEN-1, 2 and 3 were identified to be circulating in the country of which DEN-3 was the most common serotype. Male' was

the most affected island during the outbreak from which 45% of the cases (N=1,262) were reported.

1.1.4 Current Situation

In the first two weeks of 2007, a total of 71 cases were reported which is about 33% less compared with the same period of 2006 (141 cases) and about 51% more compared with the same period of 2005 (23 cases). And in the year 2007 no death occurred due to dengue fever.

1.2 Rationale

One of the Policy Goal which was mentioned in Health Master Plan 2006 - 2015 was "to ensure people have the appropriate knowledge and behaviors to protect and promote their health."

The proportion of people with correct knowledge on dengue:

- Baseline data available (survey done in December 2007)

- Target (2010) - increase by 10%

- Target (2015) - increase by 25%

Recently a survey was done to find out the baseline data and still more surveys are needed in order to have enough evidence which will then assist to identify the limitations and can facilitate to promote the health of the people.

Dengue fever has emerged as an important public health problem in Maldives as it has become endemic throughout the country. The total number of dengue fever cases recorded, both in Male' and Atolls, were 2,768 cases in 2006. So it is very important to assess the knowledge, attitude and practices of dengue prevention among

people, the shortcomings in this important aspect should be identified and hence it can be worked on to develop appropriate community-oriented prevention programs.

Community participation and co-operation has resulted in various degrees of success in disease prevention. This will result in efficient health care in the community level. One of the possible determinants of decrease in dengue illness rate can be increased awareness of the disease, which can be brought about by appropriate dengue prevention programs.

Furthermore, studies on this topic are deficient in Maldives and work need to be done to find out the present status regarding dengue prevention and to make efforts to make it worthwhile task.

1.3 Background information of Maldives

The Republic of Maldives is a chain of nearly 1,200 tiny coral islands in the Indian Ocean, of which only 200 are inhabited. The Maldives Archipelago contains 26 geographic Atolls that together form a chain 820 kilometers in length and 120 kilometers at the widest point. The 26 geographic atolls are grouped into 20 administrative regions. All islands of Maldives are very low lying, and none exceeds an elevation of three meters. More than 80 percent of the land area is less than 1 meter above mean sea level. The total population of the Maldives in 2006 was 298,698 with a growth rate 1.96%. The population of Male' was 103,693 (Ministry of Planning and National Development, 2008).

1.3.1 Problem Statement

Maldives is a dengue endemic area with periodic outbreaks during rainy seasons. Every year there is an epidemic and increase in morbidity but not in

mortality. In 2005, the cases had increased but no deaths were reported. In 2006, the dengue cases increased to 52% (2,768 cases) and there were 10 deaths (Male', Maldives, 2008).

In Maldives Aedes aegypti is the presumed vector. Maldives has received support for their social mobilization activities on dengue vector control from the World Health Organization. Maldives has peaks of dengue cases in the later part of the year from October to December.

The dengue cases have remained uncontrolled since October 2005. In 2006, cases doubled and deaths increased from 0 in 2005 to 10 in 2006. In 2007 till October, 1,494 cases have been reported and no deaths. Maldives has potential for frequent outbreaks so the disease and vector surveillance as well as awareness programs should be stepped up and sustained.

1.4 Objectives of the study

1.4.1   General Objective

The primary purpose of the study was to identify the current state of knowledge, attitude and practices of the people living in Male' regarding dengue fever.

1.4.2   Specific Objectives

a. To illustrate the demographic characteristics of people in Male'.

b. To study the relationship of dengue fever prevention practices with age, gender, education, sources of information and level of knowledge and attitude.

1.5 Research Question

What is the knowledge, attitude and practice level of the residents who are living in Male'?

1.6 Expected Outcomes and Benefits

1.6.1 The results can be used as a guideline in planning for more effective and reliable solution to health problems in relation to dengue fever.

1.6.2 Results can direct policy makers on health promotion interventions that are more likely to improve in declining the dengue cases in future.

1.7 Operational Definitions

1.7.1 **Knowledge:** The knowledge that the respondent have regarding the cause, transmission, clinical manifestation and prevention of dengue fever.

1.7.2 **Attitude:** The feeling and belief of the respondents with regard to dengue fever and its prevention.

1.7.3 **Practice:** The actions intended to do in order to prevent from dengue fever.

1.8 Research Variables

Table 1: Research variables, determinant scale and variable measurement method.

Conceptual Variables	Operational Variables	Determinant Scale	Variable Measurement Method
Demography	Demographic Data:		Questionnaire
	1. Age	Ratio	
	2. Sex	Nominal	
	3. Education	Nominal	
	4. Occupation	Nominal	
	5. Previous history of DF	Nominal	
	6. Source of information	Nominal	
Knowledge on:	Test score on:	Ordinal/ Ratio	Questionnaire
- Disease	Disease knowledge		
- Mode of transmission	Transmission knowledge		
- Prevention & treatment	Prevention knowledge		
Attitude	Likert's scale on beliefs and feelings.	Ordinal/ Ratio	Questionnaire
Dengue Prevention Practice		Ordinal/ Ratio	Questionnaire

1.9 Conceptual Framework

Independent Variables   Dependent Variables

✓ Age, Gender, Education, Occupation ✓ Knowledge about DF prevention ✓ Attitudes towards DF prevention (Feelings, Beliefs, Attention) ✓ Influenced by family, friends or neighbors.

Practice of the people regarding Dengue Prevention (use of mosquito coils/mats, keeping surroundings clean, eliminate breeding sources, etc.)
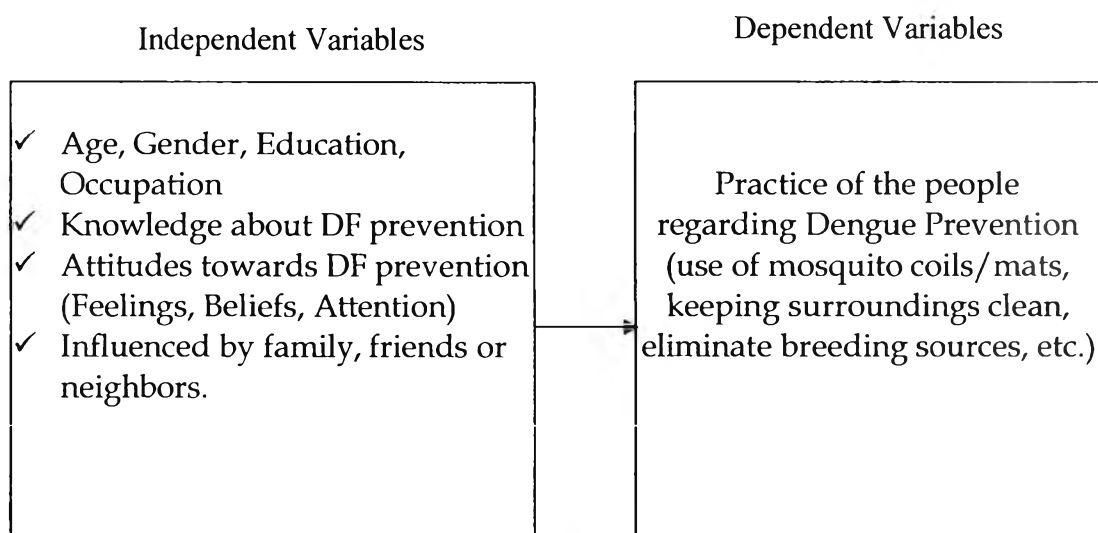
Figure 1: Conceptual framework of the study

1.10 Summary of the Thesis

The study used a descriptive design involving indirect observation and a survey with the utilization of a questionnaire and an observation check list as the data collection tools. The sample comprised of 374 residents from Male', Maldives. The purpose of the study was to assess the people's knowledge, attitude and practice level of dengue fever prevention.

This thesis presents an over view of the literature found on knowledge, attitude and practice of dengue fever prevention in chapter 2 with details of dengue virus and clinical manifestation of dengue virus. In chapter 3, the research design and the methods used for data collection are described in detail. Chapter 4 presents the results of the statistical analysis and chapter 5 provides a summary of the research and discussion of the findings with implications for practice and future research.

The next chapter presents the context of the study in detail with reference to current literature.