



CHAPTER I

INTRODUCTION

1.1 Background and Significance of the problem

Diabetes is a chronic illness that is characterized by elevated blood glucose levels and requires continuing medical care and patient self-management education to prevent acute complications and to reduce the risk of long-term complications (American diabetes association, 2008).

There are two major classifications of diabetes, namely, Type I and Type II. Type I diabetes, which affects 10-15% of all people with diabetes, is primarily the result of the inability to produce insulin due to beta cell destruction in the pancreas. While Type I diabetes accounts for fewer individuals with diabetes, it results in a disproportionately higher frequency of diabetes related complications. Type II diabetes, affecting over 80% of those diagnosed with diabetes, results from a combination of insufficient insulin production and/or resistance of the cells of the body to the actions of insulin (Registered Nurses' Association of Ontario [RNAO], 2004).

Regardless of the diabetes type, over time, failure to achieve optimal glycemic control can cause damage to the body's small and large blood vessels and nerves. This damage can affect the functioning of many body organs and interfere with wound healing. Diabetes is a major cause of coronary artery disease and is the leading cause

of new cases of blindness and kidney disease (Canadian Diabetes Association [CDA], 1998; 2003).

The prevalence of diabetes worldwide is estimated to be 4.6% in the 20 to 79 year age bracket. In 1985 an estimated 30 million people worldwide had diabetes. In a little over ten years that number has risen to 150 million people. The World Health Organization has warned that diabetes has reached epidemic proportions with the number of people having diabetes anticipated to reach 300 million by 2025 (Gravely, 2002).

The prevalence of diabetes is highest in developed countries but developing countries are expected to have the largest increase in the next decade. The prevalence of diabetes in developing countries is expected to increase by 170% between 1995 and 2025 compared to 41% in developed countries. The rapid rise of diabetes in developing countries is associated with economic development, westernization and urbanization, all of which are contributing factors to an increasing prevalence in these countries. The five countries with the largest numbers of people with diabetes are India (32.7 million), China (22.6 million), the United States (17.0 million), Pakistan (8.8 million) and Japan (7.1 million) (Gravely, 2002).

In Thailand, Diabetes mellitus (DM) is also a common chronic disease with increasing burdens. The prevalence of diabetes in Thai adults aged 35 years or older rose to 9.6% during the year 2000 (Aekplakorn et al., 2003). Diabetes frequently affects the population aged 45 years and older (Aekplakorn et al., 2003) and approximately 99% of diabetes is non-insulin dependent diabetes in Thailand (Tiangrat, 2001).

Consequences of DM Type II are many; one of them is foot ulcers. Foot ulcers are a significant complication of diabetes mellitus and often precede lower-extremity amputation (Frykberg, 2002). It leads to more prolonged hospital stays when it is compared with other complications (Harkless et al., 1999). Furthermore, diabetic foot complications are the most common cause of non traumatic lower extremity amputations. The risk of lower extremity amputation is 15 to 46 times higher in diabetic patients than in those who do not have diabetes mellitus (Armstrong & Lavery, 1998).

The mortality rate in patients with diabetic foot ulceration is also high and is approximately twice that of patients without ulceration (Pham et al., 2000). Worldwide, the prevalence of foot ulceration among patients with diabetes mellitus ranges from 1.3% to 4.8% in the community, to as high as 12% in hospital (Boulton et al., 2005). Approximately 15 to 20 percent of the estimated 16 million persons in the United States with diabetes mellitus will be hospitalized with a foot complication at some time during the course of their disease. Unfortunately, many of these patients will require amputation within the foot or above the ankle as a consequence of severe infection or peripheral ischemia (Reiber et al., 1995).

According to current statistics, approximately 10% of Thais aged 35 and older have diabetes and are potentially at risk of developing “diabetic foot ulcer”. Serious cases of diabetic foot ulcer in Thailand each year result in more than 40,000 diabetics receiving a foot amputation (Bangkok Hospital - News & Even., 2008).

The diabetic foot and its sequel account for billions of dollars in direct medical expenditures, as well as lengthy hospital stays and periods of disability (Reiber et al., 1995; Frykberg et al., 2000). The impacts of amputation in diabetic include physical,

psychological, spiritual, social and economic changes of diabetic patients. Although the end results of diabetic foot ulceration may be devastation, the development of ulceration is preventable by appropriate foot care programs including glycemic control, foot exam and patient education programs which can decrease the rate of diabetic foot ulcer and amputation from 85% to 45% (Mayfield et al., 1998).

Frequent assessment of risk factors (neuropathy, foot deformity, history of ulceration and angiopathy) is necessary for the early detection of patients at risk for developing foot disease and for preventing amputation. Better patient education about foot care and appropriate footwear are expected to prevent at least half of the amputations for diabetic foot disease.

Multidisciplinary management programs that focus on prevention, education, regular foot examinations, aggressive intervention, and optimal use of therapeutic footwear have demonstrated significant reductions in the incidence of lower-extremity amputations (Frykberg, 2002).

If the diabetic patients have knowledge and attitudes about the preventive behaviors regarding diabetic foot ulcer, they can apply them in their daily living. The complications may decrease and their quality of life may increase and thus, reducing healthcare costs for this chronic disease.

One of the major health service providers in Bangkok and Metropolitan area are those 68 Bangkok Metropolitan Administration Health Centers (and 82 of their sub-branches) dotting around the city. Bangkok Metropolitan Administration Health Centers are under the supervision of Bangkok Metropolitan Administration. All these Centers have been categorized into 3 groups, first is the inner city group, followed with central city group, and lastly, the outer ring group. In order to study about

preventive behaviors regarding foot ulcers in diabetes Type II patients in Thai population, the researcher has chosen one of the outer ring Bangkok Metropolitan Administration Health Centers, namely, Bangkok Metropolitan Administration Health Center No. (BMA 48) (or BMA Health Center No. 48 in short) as the study site. BMA 48 is located in Nongkham (western of Bangkok) and is in adjacent to Nakornprathom province. It consists of 3 sub-branches – Nakvatcharaoutid, Nongkham, and Pitiwan.

1.2 Research questions

1. What are the demographic and socioeconomic background, level of knowledge, level of attitudes, and level of practices of preventive behaviors regarding foot ulcers in diabetes type II out-patient department (OPD) patient population at Bangkok Metropolitan Administration Health Center No. 48 (BMA Health Center No. 48)?
2. Do the demographic and socioeconomic background, level of knowledge, and level of attitudes, associate with the level of practices of preventive behaviors regarding foot ulcers in diabetes type II OPD patient population at BMA Health Center No. 48?
3. How does the diabetes type II OPD patient population at BMA Health Center No. 48 perform their preventive behaviors regarding foot ulcers?

1.3 Purpose of the study

The purpose of the study was to describe the preventive behaviors regarding foot ulcers, and to determine the association among demographic and socioeconomic background, level of knowledge, level of attitudes, with level of practices of preventive behaviors regarding foot ulcers in the diabetes type II OPD patient population at BMA Health Center No. 48.

1.4 Objectives of study

1.4.1 General Objective

To study the level of knowledge, attitudes and practices (KAP) of preventive behaviors regarding foot ulcers in the diabetes type II OPD patient population at BMA Health Center No. 48 and the relationship among them.

1.4.2 Specific Objectives

1. To study the distribution of diabetes type II OPD patients in respect to their demographic and socioeconomic background at BMA Health Center No. 48.
2. To study the level of knowledge, level of attitudes, and level of practices of preventive behaviors regarding foot ulcers in diabetes type II OPD patients at BMA Health Center No. 48.
3. To determine the association among demographic and socioeconomic background, level of knowledge, level of attitudes, with level of practices of preventive behaviors regarding foot ulcers in diabetes type II OPD patients at BMA Health Center No. 48.

1.5 Operational terms:

1. **BMA Health Center No. 48** means one (from 68 branches) of BMA Health Center located in Western Bangkok.
2. **Diabetes type 7 OPD patients** mean those patients visiting Diabetes Clinic at BMA Health Center No. 48 at the time the author collected the data.
3. **Demographic and socioeconomic background** cover patients' gender, age, nationality, marital status, educational level (highest degree obtained), occupation, number of family members, monthly household income, monthly household expenditure, family history of DM, history of diabetic feet, height and weight (BMI), blood sugar level measured, and years of having DM type II.
4. **Knowledge about preventive behaviors of foot ulcers in diabetes type 7 patients** means patients' knowledge on DM in general and in foot care in particular.
5. **Attitudes about preventive behaviors regarding foot ulcers in diabetes type 7 patients** mean patients' attitudes on DM in general and in foot care in particular.
6. **Practice of preventive behaviors regarding foot ulcers in diabetes type 7 patient** means patients' practice on DM in general and regarding foot care in particular.

1.6 Conceptual framework

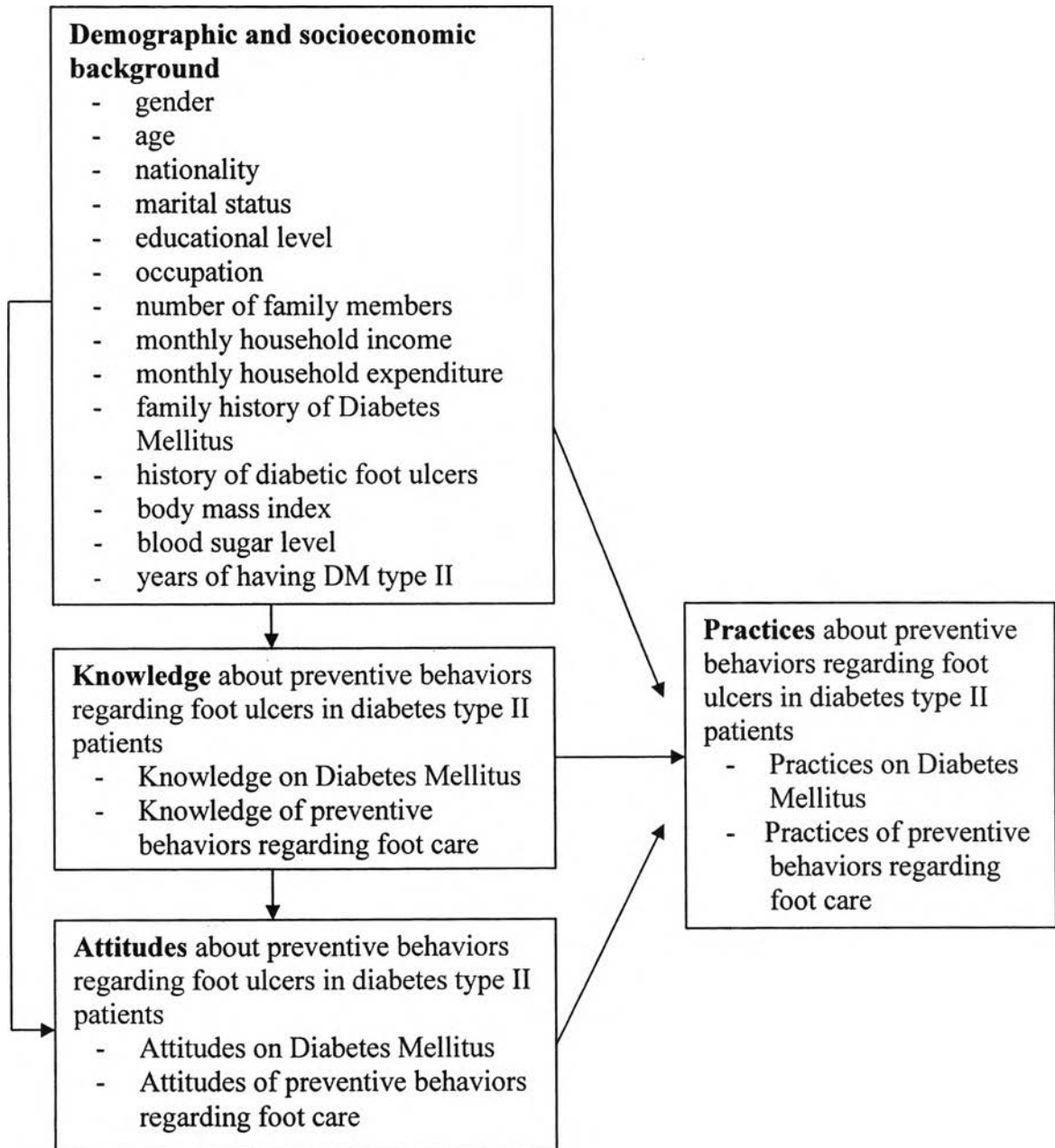


Figure 1: Conceptual framework