



## CHAPTER 1

### INTRODUCTION

Diabetes Mellitus (DM) is a chronic condition affecting over 14,000,000 persons in the United States (Harris, 1993). The number of cases of DM is increasing rapidly. There are more than 6,000,000 DM patients around the world and many people are at risk of developing DM (Phipps, et al., 1987 cited in Surasak Thumpainjitr 1998). The Health Research Institute found that there are approximately 90,000 Thai DM patients. In 1991, the report also showed that there are 42.6% of Thai people who are aware they have DM. Around 37.4% are aware that they have DM and received treatments. Only 17.6% of Thai people can successfully control their blood sugar levels (Health Statistics Division, 1997).

People who have DM can be treated but cannot be absolutely cured. If they cannot control their disease, they may suffer complications in many organs, such as eyes, kidneys, nervous system and feet. The complications of DM include hypertension, paralysis and cardiovascular insufficiency (Supawan Manosunthon, 1999). Furthermore, DM can cause neuron abnormality, lower sensitivity and peripheral numbness, especially at the ends of the feet. Wounds on the feet may become chronic or develop into gangrene, which may require an amputation. In addition, there may be decreased sexual feeling. These complications can eventually be death (Supawan Manosunthon, 1999). DM is a problem not only for patients but it also affects families, societies and communities.

Although the treatment and drug used for DM are an advanced system, there is no method to absolutely cure DM. The methods to control and prevent the disease only delay the complications. This depends on patients' behavior and efforts about food control, exercise, drug use and health care (Nell 1987 cited in Poonsriiri Awroonnate,

1998). DM is a non communicable, hereditary disease. It is caused by an inadequate supply of insulin from the beta cells of the pancreas. When beta cells of the pancreas not can flow, insulin is inadequate. This results in an increase in blood sugar levels. There are various classifications of diabetes. Non- Insulin Dependent Diabetes Mellitus (NIDDM) can be called type 2 DM while Insulin-Dependent Diabetes Mellitus (IDDM) can be called type 1 DM (Harison, 1994)

Non-insulin dependent diabetes mellitus is the commonest form of DM. There is no requirement for insulin to preserve life. The majority of patients can be managed by nutrition therapy alone. The DM conditions will change depending on self-care of the patients. The self-care factors consist of 3 aspects. They are knowledge, skill or intention, beliefs or motivation and health facilities. (Joseph, 1980).

The knowledge of nutrition therapy is to restore normal blood glucose and lipid levels. It also prevents hyperglycemia and/or hypoglycemia. Therefore comprehensive nutrition education and follow-up are essential components for diabetes patients. The intention, belief and motivation are also important to change behaviors. Making them believe first and then pay attention, interests are followed up. All motivation are inner drives existing in the people, making them be ready and have interest in self-care activities (Joseph 1980). As can be seen, few studies have investigated patients self-care behaviors and evaluate interventions to improve dietary behavior, exercise and glucose testing.

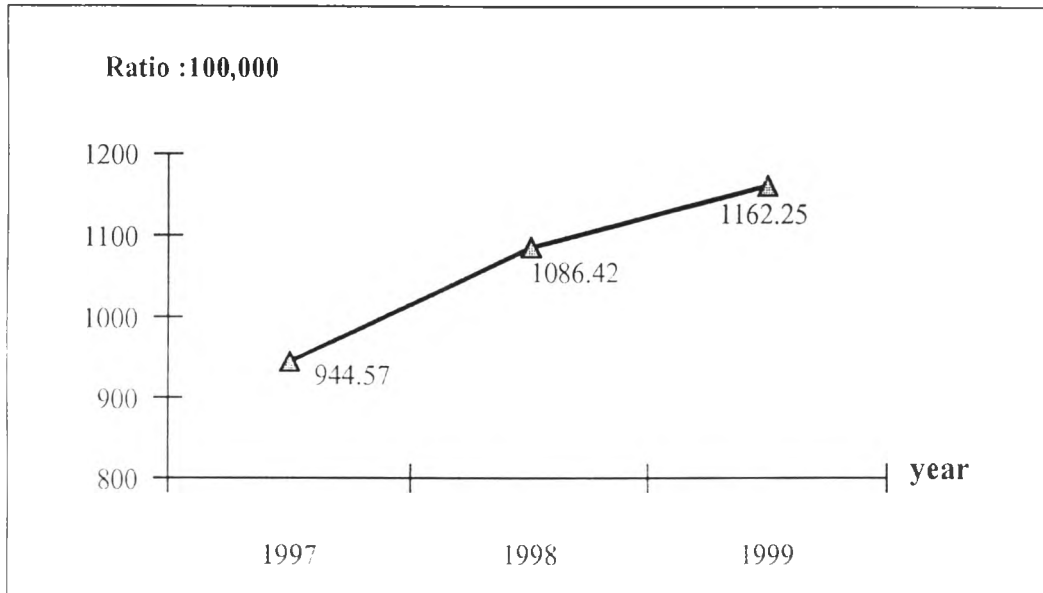
Educating by group process will bring about the patient motivation, making DM patients ready to get self-care practice. Once the objectives and the structure of the group are determined, the group leader can lead people to change in the group. The patients will meet a specific health care need. However, knowledge alone is not enough to change a patients' health related behaviors.

The group process was studied in Thailand and other countries. The findings showed that the group members know the disease, had less worry, adjusted one's self, and were able to take care of one's self (Nursing division, 1995). Prueksachiwa Tassanee (1992), studied the group process, providing manuals for practice, and told the patients to read the manuals for revising after having joined the group process. The result reported that the pregnant woman who were the carriers of Hepatitis B knew the disease and had suitable behaviors. In addition, the result of the quasi-experiment of Chuasin Nongnuch (1997), who studied the effect of group process on adaptive behavior and quality of life of HIV positive patients found that the score of adaptive behavior in the experiment group was higher than the controlled group.

Awroonnet Poonsiri (1998) studied the effect of group process on knowledge, self-care behavior and DM control of NIDDM who were firstly diagnosed and never treated. There were 10 patients getting treated for not over one year in the DM clinic of Sririrarch hospital. The result found that the score about knowledge, self-care behaviors after being informed was higher than the score for those not getting educated.

DM is a first priority and important problem in Yasothon province. A study of DM in 1999 found that it was the fourth cause of death and the sixth cause of illness in patients (Yasothon Provincial Health Office, 1999). The number of patients has an increased every year. For example, the number of DM patients registered to be given treatment by a doctor were 4,574, 5,925 and 6,464 persons or 944.57, 1086.42 and 1,161.35 persons per 100,000 population respectively (Yasothon Provincial Health Office, 1997–1999), as shown in figure 1

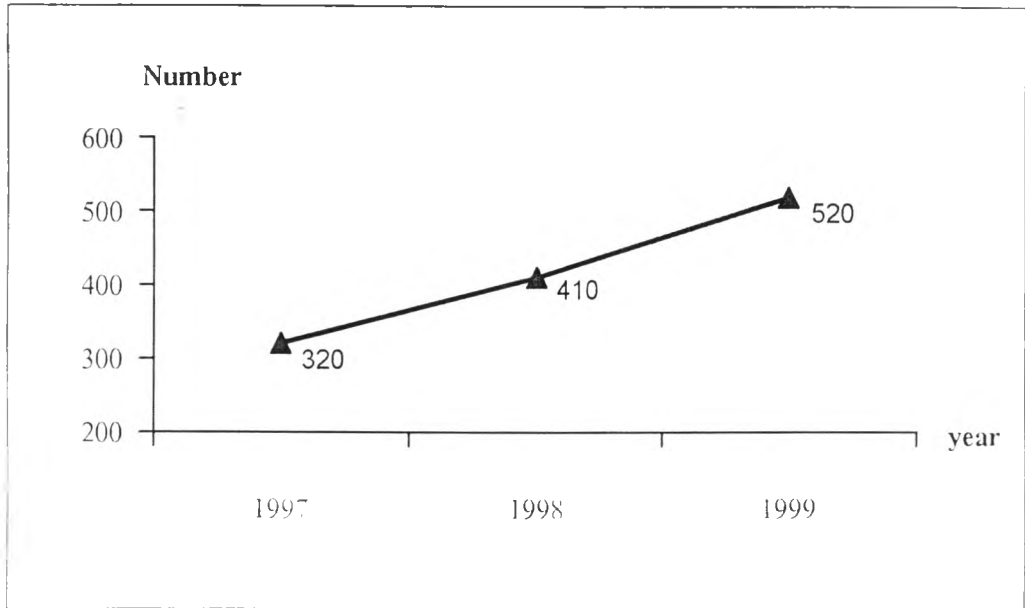
**Figure 1** ratio of DM patients in Yasothon per 100,000 population



Source : Yasothon Provincial Health Office. 1999

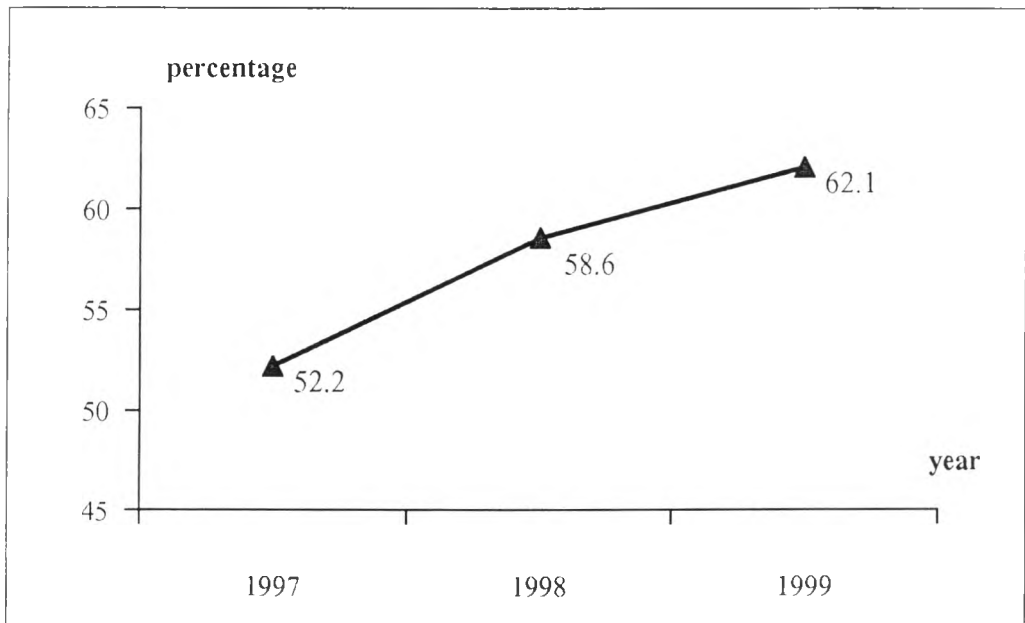
Patiu Hospital has 30 beds . It established a DM clinic in 1996, giving service every Tuesday. The number of patients has increased each year according to the records of the DM clinic in 1997–1999. The number of the patients was 320, 410, and 460 respectively, as shown in figure 2. A study of the FBS test found that 52.2%, 58.6% and 62.1% could not control their BS ( FBS over 140 mg/ dl least 2 times for the last two month that the DM patient was examined ,as shown in figure 3). The ratio between male and female patients is 1:5.2. he youngest DM patient was 14 years old, and the oldest was 78 year of age. The main occupation is agriculture.

**Figure 2** The number of NIDDM Patiu Hospital (1997 – 1999)



Source : DM clinic, Patiu Hospital 1999

**Figure 3** Percentage of poorly controlled blood sugar in Patiu Hospital (1997- 1999)



Source : DM clinic, Patiu Hospital 1999

The steps and model of DM clinic in Patiu Hospital are as follows:

Step 1 – The DM patients show their identification individual cards at the statistic room, then they go to the laboratory room which begins examination at 07.00 am.

Step 2 - The DM patients receive a blood examination, and wait for the blood results.

Step 3 - While waiting for the results, their blood pressure (BP) and body weight are checked.

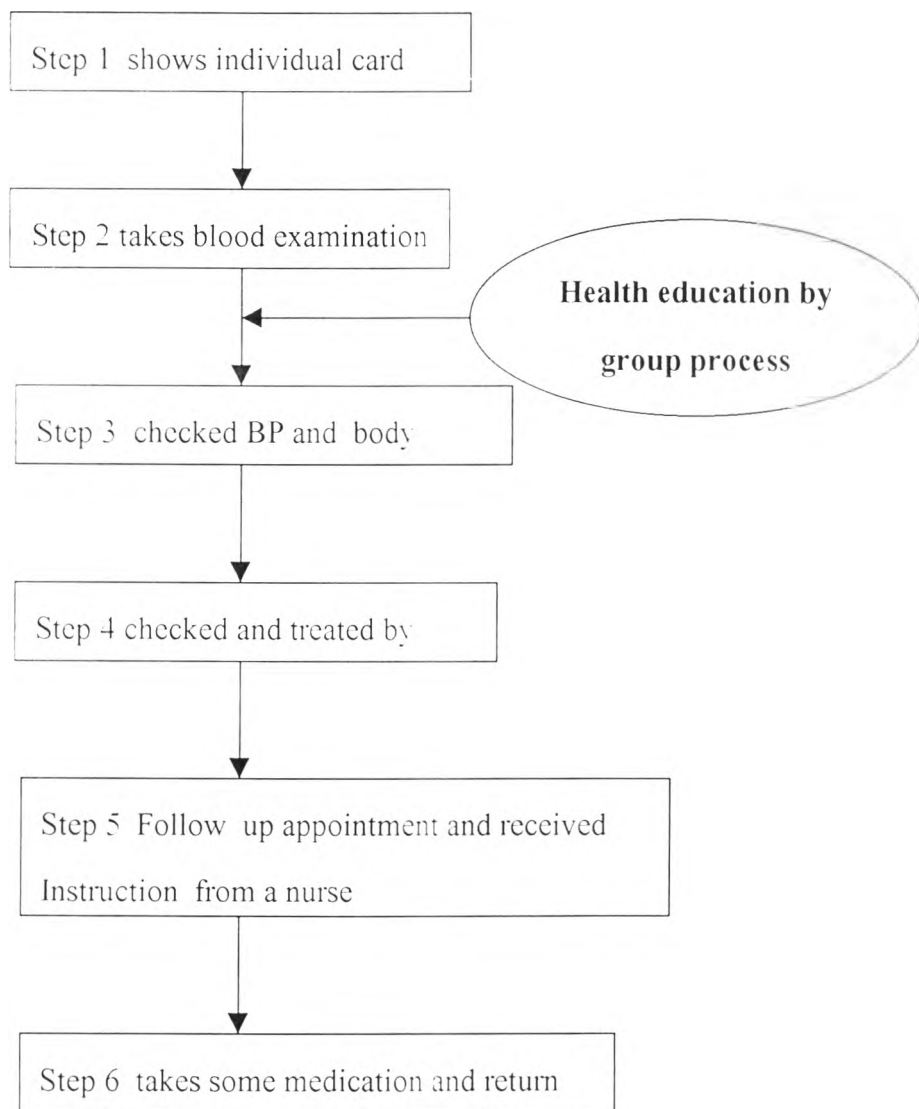
Step 4 - They are checked and treated by the physicians doctor in the examination room.

Step 5-The DM patients make a follow-up appointment, receive instructions and information about DM from a nurse.

Step 6-They are prescribed some medications at the pharmacy and return home.

( As show in figure 4 )

**Figure 4** The steps and model of HE at DM clinic. Patiu Hospital



Based on the service model of DM clinic as mentioned above, there are not enough staff to promote self-care of the patients, because the large number of cases of uncontrolled blood sugar. The present study evaluates a group process program to improve diabetes self care developed specially for patients with Type II diabetes at Patiu hospital. The intervention was based on results of knowledge level of DM patients.

The independent variable are age , sex , education , economic status and duration of DM . The dependent variable is the poorly control BS of NIDDM patient. Intervention is health education by group process. The group held a meeting for a total of 5 time as follow :

- 1<sup>st</sup> time - providing knowledge regarding DM
- 2<sup>nd</sup> time - providing knowledge regarding food control
- 3<sup>rd</sup> time - providing knowledge regarding exercise
- 4<sup>th</sup> time - providing knowledge regarding DM drug taking and self-health care
- 5<sup>th</sup> time - group evaluation

The dependent variable are knowledge and self – care behavior about food control, exercise, DM drug taking and self–health care. (As show in figure 5)



**Figure 5** Conceptual framework of group process on controlled blood sugar in poorly controlled blood sugar of NIDDM patients.

