

CHAPTER 1

INTRODUCTION

Diabetes Mellitus (DM) is an incurable chronic non-communicable disease which deteriorates patients' health. Sometimes serious complications of the disease could lead to other secondary diseases such as renal failure, ketoacidosis, urinary tract infection, heart disease and retinopathy. Serious retinopathy could cause blindness. Even though diabetes mellitus is a chronic disease with its complications that could be a cause of death, but if diabetic patients have knowledge on diabetes, and adequate and continuous self-care in health promotion practices through participatory learning, which emphasizes on patient centered method, they will able to maintain normal fasting blood sugar level and manage to reduce disease's severity. This leads to long live of diabetic patients. The participatory learning comprises of 4 main stages; experience development, experience analysis and exchange (reflect and discussion), understanding and conceptualization as well as experimental and application.

There are many causal factors that cause diabetes. Most factors involve health behaviors of a person; family and community such as food consumption behavior, which nowadays is likely into western style. This is a style of food with high carbohydrate and fat contents resulting free fatty acid into body. The fat will be directly

delivered to liver and then responded to stimulation of sympathetic nerve system, which is related to insulin resistant condition (Giacobino J-P, 199; 132; 377-385). As a result, obesity is an important risk factor of developing diabetes. According to report of World Health Organization (WHO), it revealed that countries with rapidly change of life styles, as western styles and Asian will have higher incidence rate of diabetes than that of westerners (Zimmet, 1992: 15: 232-252). There are not less than 50 million diabetic patients all around the world and the number may increase to more than 500 millions in the year 2000. Majority of diabetic cases are in developing countries (King H., Rewers M., 1993; 16; 157-177). It was found that appearance of developing diabetes of these groups resulted from long-term accumulation of the disease. These were found in adults more than in children. Long-term micro vascular complications that are harmful to the patients are for instance diabetic retinopathy, nephropathy and neuropathy (WHO 1995; 65-66).

In addition, report of Department of Health & British Diabetic Association revealed that diabetic retinopathy was a major cause of blindness in diabetic patients of younger than 60 years of age. One in 3 patient developed end-stage renal failure and 50 percent of them had their organs cut off (Mc. Dowell and Gordon, 1991; 1). According to a study in Thailand, it found complications in diabetic patients as hypertension, myocardial infraction, blood vessel blocked in brain, cataract and complications of renal failure of 37.4, 11.3, 4.8, 41.5 and 14.9 percent respectively (Tanya Chedthagoon, 1996; 172). Death rate and disability rate increased in non-insulin-dependent cases (Chinese Diabetes Association, 1995- cited in Magxia, 1997; 14).

For the situation of diabetes in Thailand, Diabetic Association of Thailand first detected prevalence rate of diabetes in 1988 with 322,953 people of all ages employed urine screening and fasting blood sugar tests. 8,110 people were detected to have diabetes with prevalence rate of 2.5%. In 1991 to 1992, 13,519 people of 15 years of age and over were examined for diabetes. 2.3% of them were detected with diabetes. The diabetes rate increased respectively with age and significantly found in people of 40 years of age and over. A highest number of people with diabetes were male and female of 55-59 years of age (Supawan Manosoonthorn, 1999: 33-34). Moreover, it found that the death rate of Thai population due to diabetes increased from 3.8 in 100,000 people to 5.0, 5.3 and 6.2 in 1990, 1991 and 1992 respectively. In 1995 the death rate of Thai population due to diabetes was 7.4 percent per 100,000 people (Supawan Manosoonthorn).

Although treatment technology and medicines for diabetes, in the present, have been highly developed but disease control results and prevention of disease complications are still under satisfactory level due to inadequate self-care behaviors on health promotion of diabetic patients. Diabetes patients have various problems relating to each other such as uncontrolled fasting blood sugar, chronic complications, poor quality of life and early death (Ratchata Ratchatanawin and colleagues, 1987: 183-189, Lloyd et al. 1992: 166-172, Bild et al. 1998: 999-1006). These problems finally affected society and economy as a whole such as loss of human resources and treatment fee (Olivera et al. 1991: 593-596).

According to the mentioned problems, controlling blood sugar to normal level therefore is a main target of care and treatment for diabetes patients. It is because poor blood sugar control is a cause of chronic complications leading to other related problems in diabetes patients (Godine, 1988: 1271-1277). Health officers who involved have tried to search for a method to help diabetes patients to control their fasting blood sugar. Results of research on diabetes control and complications trial of 1,441 insulin dependent cases within 3-9 years duration (65-year average) showed that intensive therapy with an aim to maintain normal fasting blood sugar level was more effective than conventional therapy. This led to reduction of risk of developing chronic complications up to 34-76% and lessens progress of existing complications to 43-57% (The Disease Control and Complications Trial Research Group, 1993: 977-997). In term of nursing care, its emphasis is patient's self-health care for a good life, healthiness and happiness (Orem, 1995). Furthermore, researchers found that employing self-healthcare theory; relationship development basis and problem based learning in health promotion programs led to better changes on knowledge and behaviors of diabetes patients more than that of before participating in the program (Supawadee Limpaphanont, 1994). Patient's self care is also a factor that affects fasting blood sugar level (Frey and Denyes, 1989: 67-75). In addition, majority of patients have problems with self-care such as dietary control, medicine dosage, exercise practices, tension relief, body, skin and foot cares (Ratchata Ratchatanawin and colleagues, 1987:183-189).

Literature review of researches in Thailand showed that various nursing care methods were employed to help enabling diabetes patients to care for themselves and

capable of controlling their fasting blood sugar level. These methods were, for example teaching, follow-up support, encouraging patients to participate in nursing process and having goal setting between nurses and patients by pre-experimental design and quasi experimental design (Wanla Tnatayothai, 1982, Boonthip Siritalungsri, 1984, Jarapen Taennin, 1989, Yupin Thongsawatwong. 1990, Cambel and Stanley, 1966). The study observed sample group only or compared results of control group with experimental group. Results revealed that these mentioned methods affected patients' self-care in some aspects but had no effect on fasting blood sugar level. This was because patients lacked of participation in the learning, thinking, decision making and selection of practice methods and self-practice activities. Follow-up visit to patients in community by a team of health officer to analyze problems of self-healthcare of diabetes patients, finding solutions for problems, and providing advice to patients, increased ability of patients in better self-care (Anderson, 1994 in Boonthiwa Poejarern, 1995: 11). Participatory learning then is an important model for the improvement of self-care behaviours in diabetes patients within 5 aspects; dietary, exercise, diabetic medicine dosage, stress management and control and prevention of complications.

Yasothon Provincial Health Office is an organization that has conducted a research and development on a model for diabetic control and prevention since 1996. This was an emphasized policy of the province funded by Medical Department, Ministry of Public Health. The programs comprised of 2 models. The first model was a screening for new cases of diabetes mellitus among people of over 40 years. The second model was a setting up of diabetic service system for diabetes patients whom the blood sugar is between 100-140 mg/dl and dosage of maximum 2 tablets of

glybenclamide per day. The patients who qualified the criteria will be referred to the health center in their village. An information system with central registration for diabetes patients was developed in order to prevent duplicated information and for patients' convenience. Even though Yasothon province has carried out these programs continually but summary results showed that diabetes rate in 1996-1998 had increased from 93.86 to 131.29 and 139.91 per 100,000 populations respectively. Moreover, diabetes was found to be the 6th causal factor responsible for death in Yasothon province. These were diabetes patients with uncontrolled blood sugar level (Yasothon Provincial Health Office, 1998). Saimoon district has been a study area and a pilot district of Yasothon province in conducting service system on diabetic prevention and control since 1996 to present. In 1999, there were 124 diabetes patients with uncontrolled blood sugar level which accounted as 30.46% of all diabetes patients in Saimoon district (Saimoon Hospital, Saimoon district, 1999).

The author was responsible for provincial diabetic control and prevention. With this role, the author had opportunity to participate in supporting and promoting disease control and prevention measures to clinics and communities. The problems experienced during self-care and health behavior improvement activities encouraged the author to study the model and techniques of participatory learning in order to employ into self-care behavior improvement of diabetes patients. The advantages of participatory learning are that learners can exchange their experience, reflect and discuss their experience, understand and conceptualize a conclusion and final concept and adapt final conceptual ideas into real practices. All of these are to be operated through group learning. The ultimate outcome could help in prevention and control of disease

pathology and its complications. The health condition of diabetes patients can be considered according to glycosylated hemoglobin (HbA_{1c}) which is an index indicator of 2-months backward FBS (Wasan Sinlapasuwan and Pimpan Sinlapasuwan,1998 : 2-15).