

CHAPTER III

PROPOSAL

THE EFFECTS OF EDUCATION BASED HOME HEALTH CARE AIMING AT IMPROVING SELF CARE (KNOWLEDGE, ATTITUDE TOWARDS DECISION-MAKING AND PRACTICE) AMONG POORLY CONTROLLED BLOOD GLUCOSE LEVEL NON-INSULIN-DEPENDENT DIABETES MELLITUS

3.1 INTRODUCTION

The trend of chronic illness is presently increasing, Diabetes mellitus (DM) is one of the chronic diseases that afflicts large numbers of people of all social and economic conditions throughout the world, its condition which needs long term care, it refers to a continuum of interrelated health and social services. The World Health Organization (WHO) classification for DM highlights 2 major types such as insulin-dependent diabetes mellitus (IDDM) and non-insulin-dependent diabetes mellitus (NIDDM). NIDDM mainly occurs in adults and accounts for 90 % of all diabetics in Thailand population. The most prominent metabolic abnormality present after the onset of non-insulin dependent diabetes mellitus (NIDDM) is hyperglycemia. The annual report of Ayutthaya Health Office indicated that diabetes is one of the five major non-communicable diseases, and an increasing cause of illness. In-patient admissions from 1996 - 1998 were 204.8, 224.2 and 234.9 per 100,000 of all patients

hospitalization in Ayutthaya respectively. The mortality rate has increased year by year from 1995 to 1997, from 6.5, 7.3 to 8.5 / 100,000 patients death in the Ayutthaya province.

Nakornluang, one of the sixteen districts, is located in the Northeast section Ayutthaya province. The district is further divided into 12 sub-districts (Tumbon) and 74 villages; there are one community hospital, and 12 health centers. NKL, the sixty bed community hospital, was established in 1982, and located in Borpong sub-district of Nakornluang district, serving a population of 23,698. This hospital provides comprehensive health services including curative, preventive, promotive and rehabilitative care. More emphasis is placed on curative care, and secondary care level of health service of Thailand. The annual reports of NKL hospital since 1997 to 1998 showed that DM patients registered in diabetic clinic increased from 349 to 491 and accounting for 3,000 visits per year. The admission rates increased from 1.5% in 1993 to 5.6% in 1998. When considering the age distribution of DM patients, it was found that more than 40% are over 60 years old. Even though the DM clinic was developed to provide a more effective follow up system such as sending postcard or telephone, there is still a high percentage of patients who drop out . A study of the Ayutthaya Research Project found that the causes of drop outs and irregular visits were economic problems, miscommunication between patients and providers about important components of diabetes care, and insufficient knowledge of personnel due to understanding of the nature of DM patents. It showed that the most elderly diabetes patients in the DM clinic are poorly controlled non-insulin-dependent patients.

(Patients who have blood glucose of more than 140 mg % at least twice month during the study).

The normal or near normal metabolic control of diabetes mellitus are the goals of diabetic treatment and can be achieved from standard management including dietary control, exercise and drug therapy. These control strategies need diabetic education. The benefits of education especially in those with NIDDM are improvements of self care ability. According to Orem (1991), Self care is self-initiated behavior that people choose to incorporate into their daily lives. The purpose of self care is to promote health and general well being. Self care is important for maintaining health and quality of life for everyone, but especially for individuals with chronic illness. Self care in NIDDM requires individuals to take responsibility for their health. Individuals with NIDDM have to perform self care relative to their health in normal daily life.

Otherwise the ease with which control can be achieved is dependent upon (a) the basic nature of the disease, (b) the knowledge and cooperation of the patient, (3) the skill and concern of health care delivery system, (4) existing technology, and (5) the nature of the evaluation. The bulk of such ongoing therapy is usually provided at home by the patients themselves. Thus, by necessity, patients should become active members of the health care team. The models have been considered useful by health care team for designing and enhancing adherence to diabetes regimes, they are as follows: (1) Self- efficacy is predictive of outcome and that people are more likely to perform behavior if they feel confident that they are able to perform the particular

behavior (Bandura A, 1986). (2) Change is described five cycle stages (precontemplation, contemplation, preparation, action, and maintenance) in readiness for behavior change, after assessing the particular stage, health care team can develop and plan interventions. (3) Patient empowerment should succeed by linking to the collaboration between patients and health care team, depending on their developmental stage or current health status. (4) Health belief model prompts the health care team to explore possible reasons for nonadherence to recommended regimes so that intervention can be altered. Behavioral models relevant to self care education have been beneficial in guiding diabetes education for interventions to promote and sustain changes in behavior.

To address and rectify the lack of self care among NIDDM patients in NKL hospital, Since 1997 health team providers such as physicians, pharmacists and nurses proposed a plan to briefly describe a team approach to the education and management of the patient with diabetes at home after personnel training program to provide effective self care for diabetes patients by concept about good attitude of personnel concerning the behavioral models which are stated above to promote self care has become an essential component of a quality health care system. By using a cross sectional study in 1998, the data exercise to examine self care ability after previous home health care activity in NKL hospital showed that the patients' mean score about self care knowledge , decision-making and practice are 20.4 (40), 39.4 (50) and 10.3 (20) respectively. After interviews between patients and nursing team, from the opinions of registered nurses, they could not teach by planning and conducting

evaluation to the planning process. From the opinions of patients, information was not a direct requirement . The major problems are (a) the lack of target on assessment, planning, implementing and evaluating the home health care process, (b) inappropriate models are used. In order to modify a health education based on home health care, a NKL committee consists of the staff from outpatients, inpatients, pharmacy and physicians has been formed. The NKL committee and the researcher have worked together previously to implement the use of an education based on home health. This program applies nursing process for enhancing home health care model and to guide this study, the education process is cyclical four phases: assessment, planning, implementation, and evaluation. This program will be increased effective in developing self care educational plan as a road map for both educator team and NIDDM patients.

3.2 PURPOSE OF THE STUDY

3.2.1 Diabetes patients need to (1) have mean scores on each dimension of self care ability after entering the program which are better than before entering the program, (2) means on fasting blood sugar when entering the program and in each month through to end need to be lower than before entering the program. It is expected that target diabetes will be able to maintain their health status and to increase their well being to cope with the disease physically and mentally.

3.2.2 The organizing hospital will learn the appropriateness of using education based on home health care applied nursing process approach among diabetes. Recommendations for the hospital management team to develop appropriate strategies and specific programs to increase knowledge and the practice of self care. The study can be used as a basis for the hospital management to increase the effective use of regular team meetings to share ideas, discuss problems and maintain good communication which is essential to maintain the quality of health care service in the hospital.

3.3 OBJECTIVES

The objectives of this study are as follows:

3.3.1 GENERAL OBJECTIVES

To develop an appropriate model of education based on home health care for improving self care ability among the poorly controlled NIDDM who are registered at the NKL diabetic clinic.

3.3.2 SPECIFIC OBJECTIVES

1. To compare the level of the knowledge, decision-making and practice in the poorly controlled NIDDM patients who receive education based on home health care through the comparison of pretest and post test scores.

2. To compare the level of fasting blood glucose in the poorly controlled NIDDM who received education model based on home health care through the comparison of pretest and post test scores.

Operational Definitions: The following terms are defined for the purpose of the study.

Education based on Home Health Care is a part of comprehensive health education to promote, maintain or restore health and should be individualized to the patients including achieving successful self care management in the patients home environment. The successful of this model is contingent on the ability of the nurse to use the nursing process to develop a plan of management that best fits the individual or family needs of the patient.

Health education is primarily a specialized communication process, and nursing emphasizes the concepts of communication and process within its practice.

Home health care is that component of a continuum of comprehensive health care whereby health service are provided to individuals and families in their places of residence for the purpose of promoting, maintaining or restoring health.

Self care ability is individual's abilities and characteristic essential for performance of self care activities. The characteristics of self care ability in this study will be classified into good and poor in each categories:

Knowledge : Knowledge refers to the understanding of following:

(a) the general of DM regarding to definition, symptoms and signs, treatment, (b) complication of DM, (c) diet control, (d) exercise, and (e) foot care.

Attitude towards decision-making : The feeling and beliefs that largely determine how the patients will perceive their environment and what they want to have (or to be done to them) related to self care behavior of diabetic control and preventable or the feeling and belief what the patients think is true with respect to what they or health providers know or behave.

Practice : refer to productive-operations in order to control diet, medication, exercise, foot care and giving correct answer about how to prevent diabetic complication.

Poorly controlled non-insulin dependent diabetes mellitus (NIDDM) means NIDDM patients with more than 3 months duration of treatment of disease aged 40-70 years, and who have a fasting blood glucose (FBS) more than 140 mg % at least twice before recruitment.

3.4 METHODOLOGY

Individuals affected by NIDDM must learn self care or self management skills and make lifestyle changes to effectively manage and avoid or delay the complications associated with this disorder. For these reasons, the conceptual framework for this study was developed from Orem's (1991), Self - Care Theory of nursing for appropriate planning to promote self care ability and health status among poorly controlled NIDDM patients.

Self care ability refers to the human capabilities of individuals to perform actions to take care of themselves and others (Orem, 1991). Operationally, this study has defined an individual's abilities to perform self care as ; (a) activities regarding their diabetic self care knowledge about diet, exercise, medication, complication and foot care, (b) self care attitude towards decision-making on diet, exercise, medication complication and foot care and (c) self care practices on diet, exercise, medication complication and foot care to stabilize structural, functional, developmental status, health and well-being. People who engage in self care know about themselves, their functional state, and the care that they need. They want to know, they appraise, investigate, and make judgments and decisions. Self care abilities are expressions of what people have learned to do and can do in both the investigative, and decision-making phase of self care, and the activity phase, within the existing human and environmental conditions.

Outcomes of the study will compose of two parts as shown in figure 3.2 :
Diabetic self care ability (knowledge, attitude towards decision-making and practice of self care on diet, exercise, medication, complication and foot care), and fasting blood glucose (FBG) levels, which may be outline as follows:

Primary outcome:

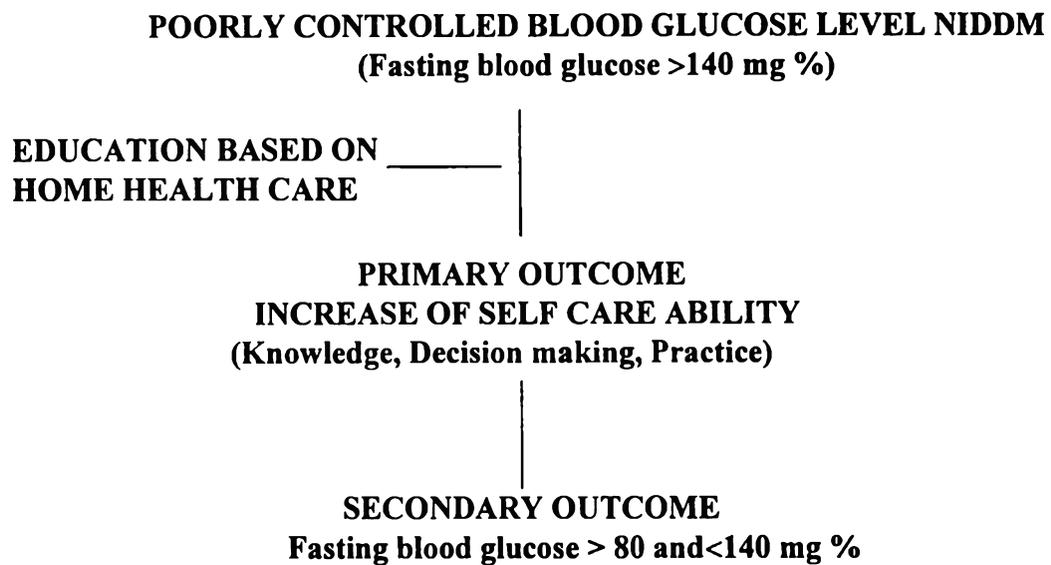
Self care ability (knowledge, decision-making and practice about diabetes mellitus)

Secondary outcome:

Fasting blood glucose (FBG) – a sample of three milliliters of whole blood was collected to measure FBG with Beckman glucose analyzer (Beckman, USA). The criteria of the poorly controlled NIDDM in this study was defined as a patient with a fasting blood glucose of more than 140 mg % at the end of study (month 5).

The diagram of the conceptual framework of this study is shown in Figure 3.1 .

FIGURE 3.1 : Conceptual model of effectiveness education based on Home Health Care on Self Care Ability in poorly controlled non-insulin-dependent diabetes mellitus patients.



3.4.1 STUDY DESIGN

This study design is quasi experimental with one group pre-post test that aims to compare diabetic self care knowledge, decision-making and practice scores before and after receive education based on home health care program.

3.4.2 STUDY POPULATION

1. The target population are Thai patients diagnosed NIDDM by physicians.
2. The population of this study is diabetic patients attending the out patient diabetic clinic, Nakornluang Hospital, Ayutthaya. Twenty-seven patients are selected by purposive sampling through calculation by using criteria in case of selecting 15-30 % total of population (Boonshom Srisaard, 1989: 38; Prakong kunsuit, 1981 refer

to Yuvadee Lurcha and Apiradee Plodnaimuarg, 1999: 53) .Total of poorly controlled Blood glucose level (FBS > 140 mg% at least twice before recruitment) is 180. The sample size is selected in 15 % of 180 = $180 \times 15 / 100 = 27$.

Inclusion Criteria :

NIDDM patients with a treatment duration of disease more than 3 months, aged 40 70 years, with a fasting blood glucose level of more than 140 mg/dl at least two consecutive times before entry.

Exclusion Criteria :

1. Insulin dependent diabetes mellitus
2. NIDDM patients with the following conditions: (1) severe obvious visual problems, (2) a history of strokes confirmed by physical examination, (3) evidence of a myocardial infarction detected by electrocardiogram in the previous 6 months, (4) evidence of a severe renal insufficiency (serum creatinine more than 3 mg/dl), (5) poor cognitive functioning, and (6)any underlying conditions that could prevent an adherence to the study protocol.

3.4.3 INSTRUMENT

The research instruments include two main parts of a partially open ended questionnaire and observations by facilitators and staff.

There are two parts of the questionnaire to be used in this study.

Part 1 : This is comprised of demographic data and additional information about the characteristics of the patients such as age , sex, education, duration of DM, treatment , current fasting blood glucose level, body weight and drug use pattern.

Part 2 : The measurement of Diabetic Self Care Ability was originally developed by Evers, (1986) based on Orem's Self Care Deficit Theory to measure one's power to perform the productive operation of self care regarding to knowledge, decision - making and perform activities of diabetic self care.

The Diabetic Self Care Ability scale is a rating scale questionnaire and consists of 40 items, classified into 3 equal levels, namely high, moderate and low level. This was divided into 3 categories; knowledge, decision-making and practice. Among all items, twenty were used to measure knowledge about diabetic self care (No.11-30), ten to measure decision-making(No. 31-40) and ten to measure practice (No. 41-50)

1. Measurement of knowledge about diabetic self care : the answers for each of the questions are divided into 3 choices: "Yes" , "No" and "Unknown". For positive questions the score follow the scale mentioned but for negative questions the score was converted accordingly.

"Yes" = 1 score, "No" or "Unknown" = 0 score in positive

"Yes" = 0 score, "No" or "Unknown" = 1 score in negative

2. Measurement of decision-making are scored by using the Likert scale for degree of agreement as follow:

| positive | | negative | |
|-------------------|-----------|-------------------|-----------|
| Strongly agree | = 5 score | Strongly agree | = 1 score |
| Agree | = 4 score | Agree | = 2 score |
| Uncertain | = 3 score | Uncertain | = 3 score |
| Disagree | = 2 score | Disagree | = 4 score |
| Strongly disagree | = 1 score | Strongly disagree | = 5 score |

3. Measurement of practice: the answer for each of the questions are divided into 3 choices: perform all the time (Often), perform some of the time (Sometimes), and never perform (Never)

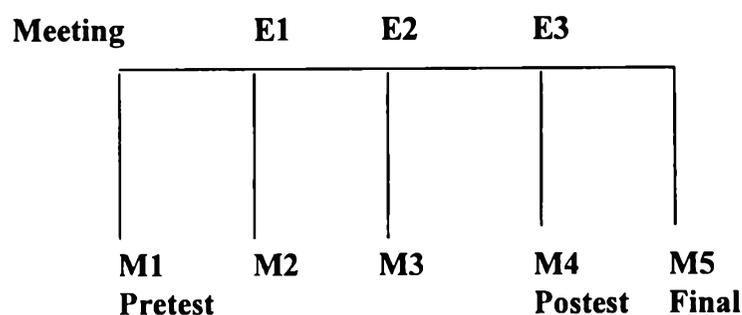
| positive | | negative | |
|-----------------|-----------|-----------------|-----------|
| "Often" | = 2 score | "Often" | = 0 score |
| "Sometimes" | = 1 score | "Sometimes" | = 1 score |
| "Never" | = 0 score | "Never" | = 2 score |

Observation

The activities take place by observation of groups and individuals. Observation provide information on facts not mentioned in the questionnaires and will test the reliability of the responses to the questionnaire. Facilitators and staff will compute these forms in the measuring self care practice part.

3.4.4 DATA COLLECTION

Figure 3.2: The data collection procedure



E= Education based on Home Health Care, M =month

The data collection procedure is showed in figure 3.3 it will be collected as follows:

1. Selection of the sample and then the researcher will explain the objectives and steps of methodology of the study to the subject and introduce them to the staff in order to take participant . A review of secondary data will be undertaken in order to collect the relevant information from the diabetic's record before the start of the program. A pre-test questionnaire will be administered in the diabetic clinic waiting room. The researcher will create a good relationship with the patient followed by interviews, according to their diabetic knowledge, decision-making, and practice as assessed by the patients' perceptions.

2. Implementation of the program

- 2.1 In the first month : The subjects will be asked to come to the diabetic clinic at NKL hospital at specific appointment periods, selecting the date at their own convenience to attend the program. The first group meeting consists of one large group that provides information on diabetic knowledge and self care management though

lectures, discussions, videotape recordings, giving pamphlets and demonstration. Providing the establishment by trust building relationship among group members and subjects such as group discussion, having lunch and snacks together. The meeting starts at 9.00 am and finishes at 3.00 pm. for one day.

2.2 In the second, the third, and the fourth month three sessions in the education based on home health care program are follow. Small group meeting of 9 subjects will be taught at home once a month for three months (at least per 3 visits per one subject). The activities provide education related to the planning health promotion for NIDDM patients by using nursing process includes assessment, nursing diagnosis, planning, implementing and evaluating. Specific training programs for self care practice for each day depends upon the patient's problems after that the team will be discussed and post conference about patients' problems for planning the next visit. The training program is continued until the patients understand and can practice by themselves. The routine of education based on home health care in each of visit are as follows:

- The first session of education (At monthly visit M2) will be started routine of education with a general overview of diabetes mellitus and complication & prevention and followed by discussions and questions about patients' problems.

- The Third session (At the third schedule monthly visit M3) start with diet control, exercise and foot care and followed by discussions and questions about patients' problems. During this period a post-test questionnaire was administered by the patients with the same pre-test questionnaire.
- The outcome of metabolic control fasting blood sugar of each patient was recorded as the baseline data, at the second month and every month of program.

2.4 Time schedule for data collection is shown in Table 3.1

Table 3.1 : Times schedule for data collection

| Outcome | Time | | | | |
|---------------------------------------|------|----|----|----|----|
| | M1 | M2 | M3 | M4 | M5 |
| 1. Primary outcomes Self Care Ability | | | | | |
| - Pre-test questionnaire | / | - | - | - | - |
| - Post-test questionnaire | - | - | - | / | - |
| 2. Secondary outcomes | | | | | |
| - FBG | / | / | / | / | / |

3.4.5 DATA ANALYSIS

Interviews will be carried out for each patient following the items in the questionnaire guideline. The time spent on each patient will be approximately 30 minutes. Data collected will be analyzed by using Statistical Package for Social Science (SPSS) computer software package.

1. The baseline continuous data will be summarized for descriptive analysis in terms of percentage, frequency, mean, standard deviation (S.D.), and range in order to describe the demographic data of the patients.
2. The comparison among mean of self care ability scores before and after program and will be analyzed by using paired t – test.
3. Fasting blood sugar will test comparison on means every month for 5 consecutive months with One way repeated measure ANOVA and difference of mean in each monthly pair by using Least Significant Difference (LSD)
4. All statistical tests will be considered significant if the p-value is below 0.05

3.5 INTERVENTION DESIGN

Education model based on home health care is a program of health education service aimed at promoting, maintaining, and restoring health to achieve quality self care followed by the patient at home by using nursing process. According to Orem's (1995), theory of self care is significant for home health care. The program is an integral component of clinical care and forms the basis for people with diabetes to learn to perform the self care necessary for ongoing management .

3.5.1 TRAINING ACTIVITY

Essential to this program is a defined curriculum for trained personnel with knowledge of diabetes and expertise in health education based on home health care methods. The old personal training program before setting home health care , there are two major steps of training . This study proposes step3 of educational process training before implementing this program. The process is an interactive, problem-solving process used by the nurse as a systematic and individualized way to fulfill the goal of nursing. It is a deliberate and organized approach requiring thought, knowledge, and experience. The nurse and the patients emerge as partners in a relationship built on trust and directed towards maximizing the patients strengths and maintain their illness.

The organization of the program should include the following: (a) Defining the aims and objectives of program. (b) Identifying appropriate personnel as sponsor, coordinator and educator they include Ayutthaya Health Care Reform Project

(AHCRP) sponsor NKL hospital physician and nurses . (c) Providing a system of training, the steps of training activities are described in the table below.

Table 3.2 TRAINING ACTIVITY

| STRATEGIES | STEP 1 | STEP 2 |
|-------------------|--|---|
| Personnel | Doctors, Nurses, Pharmacist, Other health workers | Same |
| Objective | <ol style="list-style-type: none"> 1. To understand what are the biases and the causes of bias 2. To improve the communication skills | <ol style="list-style-type: none"> 1. To identify the ideal situation and real situation 2. To find out the tool to reduce gaps between the ideal and real situation |
| Process | <ol style="list-style-type: none"> 1. Participant with discussion 2. Community based survey 3. In-depth interview | <ol style="list-style-type: none"> 1. On the job training 2. Counseling and self help groups or patient support groups |
| Content | <ol style="list-style-type: none"> 1. Thinking process 2. Questionnaire forming 3. Data collection 4. Team building 5. Community analysis 6. Ideal health system | <ol style="list-style-type: none"> 1. Identifying ideal expectation 2. Identify real situation 3. Finding out how to reduce the gaps 4. Sociology support 5. Supervisor method |

Table 3.2 TRAINING ACTIVITY (Con.)

| STRATEGIES | STEP 1 | STEP 2 |
|-------------------|--|------------------------------------|
| Material | 1. Slide set or video 2. Case presentation 3. Field visit | Same |
| Trainer | Professional of behavioral science | Doctor and senior registered nurse |
| Duration | 5 days | 5 days |
| Place | Hospital and community | Hospital and community |
| Evaluation | 1. Answer to exercise 2. Answer to questionnaire 3. Response to group discussion 4. Observation during field visit 5. Presentation of case study | Same |

Step 3 in this study focus in process of nursing. This Step is cyclical and it involves four phases: assessment, planning, implementation, and evaluation. The organization of the program in step3 includes the following:

1. Regular team meeting consist of nurses, doctors, and other medical care health teams share ideas, discuss problems and maintain good communication. These meetings is multidisciplinary and relax. Each member has equally important points to put forward.

2. Nurses have particular opportunities for observation and ongoing feedback to the team. They must work for the patients' benefit and means must be found to resolve any team conflict. Therefore, one nurse will be the program coordinator and three nurses will be program instructors for the education based on home health care team.

3. The program coordinator is a registered nurse who receives 2 steps of training on attitude change or has completed at least 24 hours of approved continuing education that includes a combination of diabetes, educational principles, and behavioral strategies . The job description for the program coordinator nurse includes the following : (a) Acting as coordination between the program indicators, and the advisory committee of AHCRP in order to make commendations including determination of instructional methods and resource requirement as well as evaluating the program. (b) Providing and /or coordinating the orientation and continuing education for the program indicators, participating in the planning and review of the program each month. (c) Evaluating program effectiveness. (d) Serving as the chair or a member of AHCRP. (e) Overseeing the program with one-site supervision.

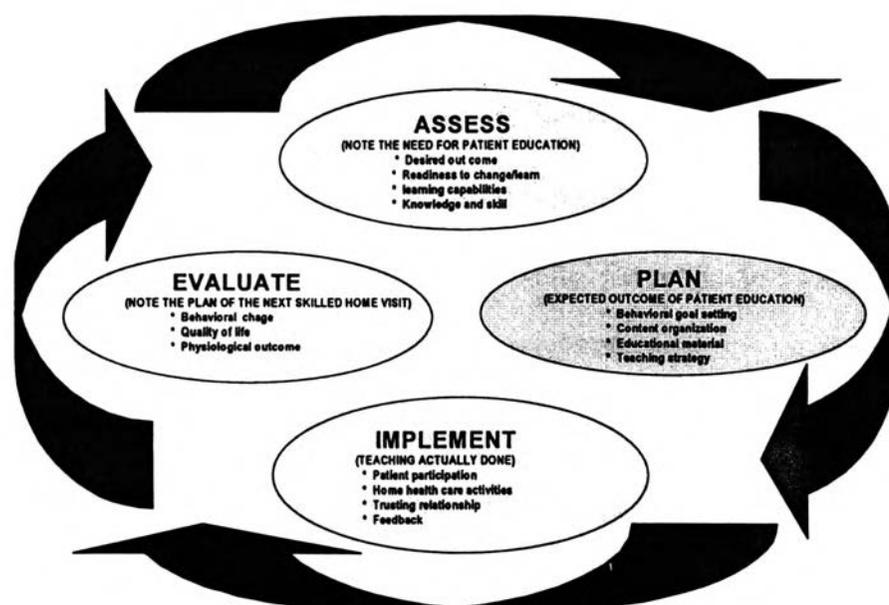
4. The program instructors include registered nurses or other health center personnel who receive 2 step training on attitude change from AHCRP routinely teach in the diabetes self care management or have completed at least 16 hours of approved continuing education that includes a combination of diabetes, educational principles, and behavioral strategies .

5. Team should agree on specific research protocols curriculum, learning methods and evaluation process as appropriate models .The curriculum for a quality diabetes self care management education based on home health care includes instructional methods, and materials appropriate for the special target population, considering type and duration of diabetes, age, cultural influences, and individual learning abilities. The goal of the curriculum instruction phase is to inform the patient that he or she has diabetes and to provide information necessary for the immediate management of the disease. The current curriculum current and includes all content areas as appropriate for identified target population. The curriculum for diabetic knowledge training the nursing teams in this step includes: Diabetes overview of the general knowledge about diabetes mellitus, signs and symptoms of untreated diabetes, acute complications (hypoglycemia, diabetic ketoacidosis) and chronic complications (diabetic retinopathy, diabetic nephropathy, cerebrovascular disease and diabetic foot). Prevention, detection and treatment of acute and chronic complications. Relationships among nutrition, exercise, medication, and blood glucose levels. Foot care, i.e., the ways to look after the feet which include cleaning, looking for & managing wounds or

ulcers and the behavior of wearing the a new pair of shoes. Behavioral change strategies, goal setting, risk factor reduction, and problem solving.

6. This study uses systematically from M.Elaine Baldwin's study to train for asking critical questions which assist the nurse in making the documentation complete and comprehensive. The process of health education is cyclical and moves through four main activities: assess, plan, implement, and evaluate as shown in Figure 3.3.

Figure 3.3 The Educational Process.



6.1 Assessment is the data-gathering phase of educational process, it is the step of "Note the Need for patient education".

- What is the nature and extent to the patient's knowledge deficit?
- How does the knowledge deficit affect functional ability and/or symptom control?
- What is the patient's educational profile (educational level, sensory deficits, learning style)?
- Assess a patient's knowledge and readiness to change or learn

The nurse's ability to conduct an interview is essential in completing a health assessment. The interview is the basis for obtaining so much data. The nurse's attitude toward the client is very important, as is her ability to ask the right question, listen attentively, and interpret the client's responses objectively and accurately (Nurses' Reference Library, Assessment (Springhouse, Pa.: Intermed Communications, Inc., 1983.). The helpful points to keep in mind while conducting the interview include privacy, (b) maintain eye contact, (c) use the client's name consistently, (d) listen carefully to the client, (e) follow the client's leads, (f) be organized, (g) explain why there is a need for the data requested, be friendly, and (h) be considerate of the client's energy level. An initial assessment is the patient's physical, function, and psychosocial status; physical environment; and social support during the first home visit. Documented in the education record and updated as needed. Nurses or program

instructors will develop the ability to function as facilitation, reflection, clarification, empathetic responses (recognize and respond to feelings in a way that shows understanding and acceptance), confrontation, interpretation, and asking about feelings. A medical chart or patient folder must be created for each patient receiving home health care. Completeness of record-keeping is as important as the quality of the notes and up-to-date. An observation not recorded is an observation not made. All notes should be signed and dated by day, month, and written either on the spot in the home or immediately upon return to hospital. Reporting the nature of patient's life style imparts all the freshness and immediacy of the information. It is very useful for the physicians to understand and develop the diabetes education in terms of patient's life style. The data of the assessment are organized to formulate a nursing diagnosis. From the nursing diagnosis the nurse instructors can develop the plan of education for each client. The information is communicated by the program coordinator and instructor involved in the patient's education both informally and formally at weekly team conferences.

6.2 Planning will identify the expected **outcome** of patient education

- What do you want the patient to know by end of visit or by discharge?
- What skills does the patient need to learn to perform?
- Using the assessment data to develop a plan, behavioral goal-setting process, decide on one-to-one

teaching session (individual counseling or self help group)

The objectives of this phase are (a) To provide an in-depth self care educational experience covering all facets of the disease, its management, and its complications. (b) To motivate self care in the patient to carry out his or her respective responsibilities. (c) To stimulate the planning and development of a long-term program of self care Patients' needs are prioritized and plans designed to facilitate and use time more effectively, after that goals are set for educational session and behavioral change.

6.3 Implementation of the home health care is when the individualized teaching plan, active participation for the patients at home. It involves putting the instructing plan into action. Note the teaching that was actually done is the step of the process begins with asking the following question: what specific information was taught?, what methods of teaching were used such as verbal instruction, charts, demonstration, patient handouts? Trust (having confidence in someone or something) as one of the central components of the nurse-client relationship. Nurses can use practical strategies to build trust in relationships. The outcome of constructive use of these strategies will be increased client well-being and satisfaction with care. Trust is defined by Meize-Grochowski, 1984 as "An attitude bound to time and space in which one relies with confidence on someone or something" After a trusting relationship is established clients communicate openly and honestly with the nurse. They share feelings and are not afraid to display anger and frustration (Morse,1991). Throughout the implementation in this study, the instructor nurses will work together under the team

leader (coordinating nurse). The leader communicates frequently with team members by having team meetings and conferences before and after activities. Pre-post conference to determine which patient behavior changes are most critical, the team nurses discuss the patients' problems and develop modifications to future goal. Nursing teams consists of 4 nurses per team each of them serve 3- 4 patients. There are 4 zones in NKL districts, each zone is covered by one nurse. The nursing team instructs in group by using self help groups or individual counseling method. Conducting 6 visits (3 visits per one month) to contact with the patients at home. The steps of each intervention phase are listed below:

- The nurse should identify herself clearly and share with the patient the purpose of the visit.
- Instruct the patient and family in the specific skills or knowledge required.
- The nurse will use all senses to observe not only the patient but also the home, family relationships, and how the patient is integrated into the family environment. this will add to the further assessment.
- Post conference should document in the patients' record to evaluate the patient's ability to attain improved positive results.
- Documentation is essential for communication of the patient's progress to physician in planning and implementing appropriate intervention strategies.

Instructional methods and materials are appropriate for the target population and participants in terms of cultural relevance, age, language, reading level, life style and specific educational needs. Communication and collaboration among program staff and instructors are facilitated by and documented in the education chart. The success of implementation phase depends on the nurse's knowledge and the skills required for instructing and the patient's readiness and motivation to learn in self care supported.

6.4 The evaluation, process evaluation is an ongoing assessment of the nursing process, it will help the nurse to reinforce appropriate behaviors, detect misinformation, and correct improper techniques. This step to note in your evaluation what the patient learned and note your plans for the next skilled nursing visit. The questions practiced for this process are as follows: (a) What knowledge and skills has the patient attained? (b) What changes have occurred in functional ability and symptom control? (c) What specific patient education needs to be done on the next? and are there needs for re-teaching, reinforcement, or re-instruction (Change in procedure, patient condition, inability to carry out tasks, post-institutionalization)? Process or formative evaluation encompasses evaluating patients, personnel, material, and the environment and how they facilitate or impede the process the nurse constantly evaluates how the instructing is going. In addition to self-evaluation, the nurse will try to have patients complete a satisfaction questionnaire about how well they perceive and tape recording her teaching. Summative or product / end evaluation helps nurses measure the effects or behavioral objective outcome. The evaluation

tools incorporate behavioral objective are included written tests, checklists, interviews, observations and health record.

The strategy of training in step3 as above is the practice of case study by lecture, problem-solving and training in self-help group support by observation during field visits. Duration of training are 2 weeks, for case presentation and supervised practice for each team. There are two types of training evaluation , internal evaluation will be carried out by the course facilitators emphasize on the progress of the program and external evaluation is conducted to assess the effectiveness and quality of the education program. The AHCR committee will perform the external evaluation. The further evaluation plan of this study are input evaluation , process evaluation, and outcome evaluation.

3.5.2 EXPECTED OUTCOME

Outcomes are the desired results for the program and participants. This program will measure and evaluate. Program effectiveness and participant outcomes include as follows:

- (1) The degree to which the participants achieve their success in self care ability.
- (2) The program's effectiveness in helping participants improve patient's health outcomes (FBS less than 140 mg %).

Outcomes will document and use for future program planning and modification. The steps in measuring the intervention outcomes in the project evaluation including Measurement of the education output: indicators as mentioned in the methodology section will be evaluated. Evaluation tools are pre-post test interview questionnaires, observation form and hospital secondary data. The program effectiveness at improving outcomes among participants will be evaluated by AHCRP and the results of this study will be reflected in the further program plan.

3.6 ETHICAL CONSIDERATION

This study will be approved by the Ethical Committee of Nakornluang hospital before beginning. Every patient will be informed about the details of the project and will be asked to sign the written informed consent before being enrolled in the study.

3.7 LIMITATION

Laboratory for assessing blood glucose control can use only fasting blood sugar because this study will be done in a small hospital. They do not have an adequate budget to use other methods. The patients in this study will receive laboratory assessing in the same instrument and use a control specimen method during the study.

3.8 ACTIVITY PLAN

It is tentatively planned that the activity will be started in October 1999 and finished at the end of September, 2000. A brief description of this plan is shown below in Table 3.3.

3.9 BUDGET

The budget required to provide financial justification for education based on home health care may be allocated from AHCRP and development budget by NKL hospital as show in Table 3.4

Table 3.4 : Estimated expenditure for program activities

| Budget category | Unit cost (Baht) | Multipluing factor | Total cost (Baht) | % of Total |
|--|------------------|--------------------|-------------------|-------------|
| 1. Personnel | | | 22,000 | 73.3 |
| ▶ Professional trainer | 1,000/ day | 2 people x 5days | 10,000 | |
| ▶ Staff training | 200/ day | 10 people x 5days | 10,000 | |
| ▶ Home health staff | 200/ visit | 10 visits | 2,000 | |
| 2. Transport & Matterial | | | 4,000 | 13.3 |
| ▶ Fuel | 100/ day | 10 days | 1,000 | |
| ▶ Paper | 100/ ream | 5 reams | 500 | |
| ▶ Disks | 250/ total | 2 boxes | 500 | |
| ▶ Tape recorder | 500/ each | 2 | 1,000 | |
| ▶ Software education | 500/ package | 2 | 1,000 | |
| 3. Dissemination of results | | | 2,000 | 6.7 |
| ▶ Meetings to disseminate results | 200/ meeting | 5 meetings | 1,000 | |
| ▶ Grapics for report | 10/ slide | 50 slides | 500 | |
| ▶ Photocopying | 1/ page | 500 pages | 500 | |
| 4. Miscellaneous & supplies | - | - | 2,000 | 6.7 |
| GRAND TOTAL | | | 30,000 | 100 |