CHAPTER III

RESEARCH METHODOLOGY

3.1 Study design

The study design was analytical cross-sectional study concerning knowledge, attitudes, and practices of preventive behaviors regarding foot ulcers in diabetes type II OPD patients at BMA Health Center No.48.

3.2 Target population

The population in this study was diabetes type II OPD patients at BMA Health Center No.48.

3.3 Study period

From February 18- March 15, 2008.

3.4 Sample size

In line with Wayne W. Daniel in regards to the determination of sample size for estimating populations, the following formula was applied:

$$n=\frac{z^2pq}{d^2}$$

According to his statement (p. 189), "We make use of the fact that one-half the desired interval, *d*, may be set equal to the product of the reliability coefficient and the

standard error. Assuming that random sampling and conditions warranting approximate normality of the distribution of p leads to the flowing formula for n (sample size) when sampling is with replacement, when sampling is from an infinite population, or when the sampled population is large enough to make use of the finite population correction unnecessary".

In this study, p was set at 0.50, due to the assumption that half of the study population has the knowledge about the study topic and the other half has not. As a result, total required randomized sampling was about 300 respondents, when the confidence level is set at 90% while allowing for error size of not more than + or – 5% (Raosoft, 2004).

3.5 Sampling techniques

Non-probability in quota sampling was applied in this study. All OPD patients within inclusion criteria at Diabetes Clinic of BMA Health Center No. 48 took part in the study on Monday and Thursday morning and also on Monday to Friday in evening hours during the period of data collection until the number reached 300 sample sizes.

Inclusion criteria: Diabetes Type II OPD patients visiting Diabetes Clinic at BMA Health Centers No. 48. The patients had DM type II for at least 2 years, were between 35 and older, both male and female, and were willing to be respondents for the questionnaire used in this study. They may also have other disease i.e. hypertension.

Exclusion criteria: above mentioned Diabetes Type II patients who were not in line with the inclusion criteria and/or who did so but were not willing to take part in the study.

3.6 Study area

This study was carried out at BMA Health Center No. 48 named Nakwacharauthit-Nongkham-Pitiwan in Western Bangkok. It is located next to Samutsakorn province (full of fishery factories with lots of Myanmar workers) and Nakornpathom province (full of electronic and rubber factories). There are mostly Thai residents and perhaps some migrants who come for treatment at this Center. For migrants, they are people from Laos PDR, Myanmar, and Cambodia working in the nearby factories. There are also 2 hospitals under BMA supervision in this area: one is Ratchapitpat Hospital and the other is Luangpho-Taweesak Hospital. As the land for building the hospitals are from the donors, the names of the hospital are as such. This year, the Governor of Bangkok emphasized on caring for the disabled and the elders, thus at this BMA Health Center No. 48, the Director established a program of hearing aids equipment for the elders and got this project to work on. This Center as well as other BMA Health Centers have family folder with Geographical Information System (GIS) for identification of patients location in the community as well.

3.7 Variables

Independent variables were as follows:

1. Demographic and socioeconomic background of diabetes type II OPD patients at BMA Health Center No. 48.
2. Knowledge about preventive behaviors regarding foot ulcers in diabetes type II OPD patients at BMA Health Center No. 48.
3. Attitudes about preventive behaviors regarding foot ulcers in diabetes type II OPD patients at BMA Health Center No. 48.

Dependent variable was practice of preventive behaviors regarding foot ulcers in diabetes type II OPD patients at BMA Health Center No. 48.

3.8 Questionnaire Development

The questionnaire for the survey was constructed by the author from various books and research papers applicable question items. After the proposal examination, with the approval of Thesis Committee, the questionnaire was first pre-tested for the reliability at BMA Health Center No. 43 and 45 for 39 sets with very low reliability scores. Therefore, second time of pre-test was again done at BMA Health Center No. 42 in Bangbon district (or Thanomthongsima Center) in the Northern part of Bangkok for 25 sets. The Cronbach's Alpha score for knowledge part was 0.5285, for attitudes part was 0.7315, and for practice part was 0.8502. An overall Cronbach's Alpha for the questionnaire was 0.8745. After the Thesis Committee's approval, the questionnaire was used in field test.

The author had divided the questionnaire into 4 parts. Starting with demographic and socioeconomic background or so called general information in part 1. Followed with part 2 on knowledge about preventive behaviors regarding foot ulcers in diabetes type II patients, part 3 on attitudes about preventive behaviors regarding foot ulcers in diabetes type II patients, and ended with part 4 on practices about preventive behaviors regarding foot ulcers in diabetes type II patients.

For part one on demographic and socioeconomic background, this section included items such as patients' name, gender, age, nationality, marital status, educational level (highest degree obtained), occupation, numbers of family member, monthly household income, monthly household expenditure, family history of DM,

history of diabetic foot ulcers, height and weight, (BMI) , blood sugar level, and years of having DM type II.

For part two on knowledge about preventive behaviors regarding foot ulcers in diabetes type II patients, there were a total of 19 questions. Four of them were knowledge items on DM in general and the rest were knowledge on self-foot-care for diabetes type II patients in particular. Scoring criteria was as follows:

Right answer got 1 score, wrong answer got 0 score, and do not know got also 0 score (to get overall picture of samples on this knowledge part). For reverse answer, the score worked backward.

The explanation of the scoring was that: right means the statement is correct. Wrong means the statement is not correct. Do not know means the respondent does not know about the statement.

As categorical scale was used in this part, the total score for grouping worked as follows:

Less than total 16 equals 0 (low level)

Between 16-17 equals 1 (moderate level)

Between 18-19 equals 2 (high level)

For part three on attitudes about preventive behaviors regarding foot ulcers in diabetes type II patients, there was a total of 11 questions. Three of them were attitudes items on DM in general and the rest was attitudes on self-foot-care for diabetes type II patients in particular. Scoring criteria was as follows:

Agree got 3 scores, not certain got 2 scores, and disagree got 1 score. For reverse answer, the score worked backward.

The explanation of the scoring was that: agree means the respondent totally agrees with the statement. Not certain means the respondent is not sure with the statement. Disagree means the respondent absolutely disagrees with the statement.

As ordinal scale was used in this part, the total score for grouping worked as follows:

Less than total 28 equals 0 (low level)

Between 28-30 equals 1 (moderate level)

Between 31-33 equals 2 (high level)

For part four on practice about preventive behaviors regarding foot ulcers in diabetes type II patients, there were a total of 11 questions. Three of them were practice items on DM in general and the rest were practices on self-foot-care for diabetes type II patients in particular. Scoring criteria was as follows:

Often got 3 scores, occasionally got 2 scores, and rarely got 1 score.

No reverse answer in this part.

The explanation of the scoring was that: Often means the respondent practices the statement more than half of the time. Occasionally means the respondent practices the statement between one-half to one-third of the time. Rarely means the respondent practices the statement less than one-third of the time.

As ordinal scale was used in this part, the total score for grouping worked as follows:

Less than total 26 equals 0 (low level)

Between 26-29 equals 1 (moderate)

Between 30-33 equals 2 (high)

3.9 Method of Data collection

The collection of data was conducted during February 2008-March 2008 by the following procedures:

1. A letter issued by the College of Public Health Sciences, Chulalongkorn University, to BMA Headquarters and to the principal authority figure in the area (Director of BMA Health Center No. 48) for his approval for research data collection.
2. Questionnaires were distributed to diabetes type II OPD patients at BMA Health Center No.48 by non-probability in quota sampling method with inclusion criteria as stated.
3. The respondents were informed of research purpose and were asked for their consent (by signing on the consent form) to participate in the research.
4. It was worth noting that the respondents were informed of the research ethics, namely, all respondents were informed about research purpose and their right to participate and to withdraw anytime as they wish. Such withdrawal had no impact on their treatment at the Health Center. Their data were also kept with confidentiality.
5. If the respondents agreed to join, they made a mark and filled-in the space provided on the questionnaire.
6. Due to the fact that the author was a Korean who had no Thai language competency, not only the questionnaire was translated in Thai, but also two Thai research assistants was equipped in this study, so as to be able to answer any questions the respondents might have while filling-in the

questionnaire. The time per one set of questionnaire was about 20 minutes for 57 question items.

3.10 Data analysis

The data was analyzed by Statistical Package for the Social Science (SPSS) Program for two steps:

1. **Descriptive statistics:** frequency and percentage for demographic and socioeconomic background and frequency, percentage, and mean for explanation on level of knowledge, level of attitudes, and level of practices of preventive behaviors regarding foot ulcers of respondents.
2. **Inferential statistics** was done with the use of Pearson Coefficient Correlation, Chi-Square, and Spearman Test, to find out the association among demographic and socioeconomic background, level of knowledge, level of attitudes, with level of practices of preventive behaviors regarding foot ulcers of respondents.

3.11 Limitation

Due to the limitation of time for the research, the study carried out only at BMA Health Center No. 48 named Nakwacharauthit-Nongkham-Pitiwan in Western Bangkok, therefore, the findings of the study can not be generalized to the overall situation of whole BMA Health Centers.