CHAPTER V

CONCLUSION, DISCUSSION AND RECOMMENDATIONS

This study aimed to examine factors related to utilization behaviors of non-insulin dependent diabetes mellitus patients at Ban Khaoro health center, Thung Song district, Nakhon-Si-Thammarat province The data was collected by individual interviews at the health center for the diabetics receiving health care services and a visit at their own houses for the ones refusing health care services at the health center. The data was collected from 1 January to 31 March 2003. The total population of 84 people was divided into 2 groups:

1. 51 diabetics receiving health care services at the health center
2. 33 diabetics refusing health care services at the health center

- 18 diabetics receiving health care services at other public health centers
- 5 diabetics having discontinuous treatment
- 10 diabetics refusing any types of treatment

The research instrument was the checklist interview designed for collecting both quantitative and qualitative data. The interview checklist was implemented with both the diabetics receiving and refusing the health care services at the health center. The accuracy of the checklist was checked and approved by 3 experts (Appendix B). The interview checklist, then tried out with the sample groups, and the reliability obtained was:

- reliability of the interview checklist on knowledge about self-care = 0.78
- reliability of the interview checklist on health perception = 0.81
- reliability of the interview checklist on social support = 0.85
- reliability of the interview checklist on satisfaction on services = 0.79

The data was subjected to analyze by descriptive statistics, i.e. means, standard deviation, number, percentage and frequency distribution. The result was presented in a tabular form. Chi-square and Fisher Exact Test were applied to determine the correlation of variances of fundamental factors, facility factors in service access, distance, time and convenience in service access between the samples receiving and those refusing the health care services at the health center. The differences of factors related to knowledge, health perception, social support and satisfaction of health center's services between the two sample groups were determined by Mann-Whitney U Test and the significant level was set at 0.05.

1. Conclusions

The samples were divided into 2 groups to compare of each group.

- 51 diabetics receiving health care services at the health center
- 33 diabetics refusing health care services at the health center

Based on the result of the present study "Factors related to utilization behaviors of noninsulin dependent diabetes mellitus patients at Ban Khaoro Health Center , Thungsong District Nakhon - Si- Thammarat Province, it can be summarized according to the objectives of the study as follows:

1.1 To investigate Factors related to utilization behavior of noninsulin dependent diabetes mellitus patients At Ban Khaoro Health Center, Thung Song District Nakhon - Si -Thammarat Province

- The result of the present study revealed that among the total 84 non-insulin dependent diabetics, only 51diabetics (60.71%) received health care services at the health center and 33 diabetics (39.29%) refused health care services at the health center.
- Factors related to behaviors in receiving or refusing the health care services included sexes, marital status, occupations, complicating diabetes, knowledge about diabetics, health perception, satisfaction in time, distance and convenience in transportation.

1.2 To examine the reasons for receiving and refusing the health services of the non-insulin dependent diabetics at Ban Khaoro health center.

- Reasons for receiving health services. The main reasons for those receiving services at the health center are convenience in transportation (19 diabetics, 37.25%), less expenditure (16 diabetics, 31.38%), service satisfaction (11 diabetics, 21.57%), and close to their houses (5 diabetics, 9.80%).
- Reasons for refusing health services. The main reasons for those refusing health services include no signs of diabetes (10 diabetics, 30.30%), inconvenience in transportation (7 diabetics, 21.21%), receiving health care services at other health care units (5 diabetics, 15.15%), treatment with herbal medicines (5 diabetics, 15.15%), wrong belief that the

diabetes is cured (5 diabetics, 15.15%), and dissatisfaction in health care services (1 diabetics, 3.04%).

1.3 To explore the relationship of population characteristics, and facility factors in terms of convenience in transportation between the sample group diabetics receiving health care services at the health center and diabetics refused health care services at the health center

- The result of the study indicated that factors involving sex, marital status, occupations, complicating diabetes, distance, time and convenience in travelling showed significant relationships with behaviors in receiving or refusing health care services at the health center ($P<0.05$).
- Examine the differences in the following aspects: knowledge about diabetes, health perception, social support and levels of satisfaction in receiving the health services between the sample group receiving and refusing the health services at the health center
- The result of the study showed that there were significant different between the two sample groups in knowledge about diabetes, health perception and levels of service satisfaction ($P < 0.01$).
- Results of blood glucose control during 3 months of treatment

In terms of blood glucose controls, most of the those receiving services at the health center (39 diabetics, 76.48%) could successfully control their blood glucose

levels, about 7 diabetics (13.72%) could occasionally control their blood glucose levels while only 5 diabetics (9.80%) could not control their blood glucose levels.

2. Discussion

2.1 From the result of the study, the relationships between factor involving population characteristics and facility factor and behaviors in receiving or refusing health care services of the two sample groups can be discussed as follows:

- Sex. Sex had significant relationships with behaviors in receiving and refusing health services ($P<0.05$). This implied that sex was one factor affecting health service access at the health center. Sex is one indicator of differences of body capability in initiating or managing the environment continuously and it also determine the capability in self-care (Orem, 1995). This was consistent with the study of Channipa Tanpumipradesh (2000). She studied factors affecting service accessibility at Banwanghin health center, Muang district, Tak province and found that there were more females receiving health services at the health center. In addition, the study by Kusol Sunthorntada and Worachai Thongthai (1996) about the characteristics of the people receiving health services and factors influencing service accessibility at the private hospitals. They also found that more females accessed all types of health care services.

- Marital status. The study revealed that there were significant relationships between behaviors in receiving and refusing health services at the health center ($P<0.05$). There were a higher number of married people receiving health services at the health center. It can be clearly seen that marriage had an influence on health service receiving. This may be because the couples will take care of each other when one becomes sick. In contrast, the people who are single, divorced or widow have to stay alone, no one to take care of them. When they become sick, they prefer to buy drugs at the pharmacy's (Suteerat Kaewpralom, 1994). This was in agreement with this study that there were a larger number of the widows who refused the health care services at the health center when compared to those receiving health care services at the health center (30.31% vs. 5.88%).

- Occupations. There were significant relationships between occupations and behaviors in receiving and refusing health services at the health center ($P<0.05$). There were a higher number of the diabetics working as farmers received the health care services compared with those working as workers or governmental officials. This was in agreement with the study by Channipa Tanpumipradesh (2000) who studied factors affecting health service accessibility at the Banwanghin health center, Muang district, Tak province. She found that the farmers, sellers and workers working in their own villages and living closed to the health centers chose to receive the health services at the health centers nearby while the

governmental officials received the services at the health center least. This was also consistent with the work by Kusol Sunthorntada and Worachai Thongthai (1996) studying the characteristics of people receiving health services and factors influencing service accessibility at the private hospitals. They found that housekeepers and governmental officials preferred the health services at the private health care units in the towns such as hospitals, and clinics.

- Complicating diseases as diagnosed by the doctors. Complicating diseases had significant relationships with behaviors in receiving and refusing health services at the health center ($P<0.05$). The complicating disease that both sample groups suffered was numbs at the edges of feet and fingers, and hypertension. This was in contrast with the study by Chanchai Chanchaiworakul (1997) who studied the diabetes at the diabetes clinic of Nongkungsri Hospital, Kalasin province and found that the most complicating disease found with the diabetes was hypertension (10.00%) comparable to the study of Wannee Nitiyanon who found the hypertension together with the diabetes about 29.9% at Siriraj Hospital. This may be because the research site was in the rural area and the diabetics living in the rural areas had less stress than those in the urban area. Therefore, the symptoms of numbs at the edges of the feet and fingers were more frequently found than hypertension.

- Distance. The diabetics living far from the health center received the health services less often than those living near the health center. Significant difference in view of distance was observed between the two sample groups ($P<0.01$). The distance from the health center affected the behaviors in receiving and refusing health services at the health center, which was in contrast with the study by Channipa Tanpumipradesh (2000) who found that distance had no effect on behaviors in receiving services at the health center; that is, there were equal numbers of those living near and far from the health center who received the services at the health center. In this study, the diabetics receive the health services at the health center because they live near the health center. This was in agreement with the previous study (Provincial Office of Public Health, 1980) which demonstrated that 80.9% of the people received the services at the health centers because of the short distance from the health centers. Moreover, they considered the services of the health center were as good as of the hospitals.

- Time. There were significant differences in travelling time between the two sample groups ($P<0.01$). Time spent on travelling to the health center affected behaviors in receiving and refusing health services at the health center. The diabetics spending about 1-5 minutes to travel to the health center had the higher number (74.50%) than those spending more than 15-30 minutes to the health center. Most of those refusing health services at the health center were those who spent more than 15-30

minutes to travel to the health center (66.67%). This implied that the longer time for travelling, the lesser number of the diabetics receiving health services.

- Convenience in travelling to the health center. Significant differences in convenience in travelling were observed between the two sample groups ($P<0.01$). The convenience in travelling had an effect on behaviors in receiving and refusing health services at the health center. Most of those refusing health services (60.61%) experienced the inconvenience in travelling to the health center while most of those receiving health services (98.03%) had convenience in their travelling. This study supported the separation of the responsible zones under the health centers conducting the 30 bath medicate project, which, according to the governmental policy, aimed to provide health services for the people at the health centers nearby (Statement of Governmental Policy, 2001). This was in contrast with the study by Channipa tanpumipradesh (2000) who found that the convenience in travelling had no significant relationship with the health service accessibility. This may be because when anyone feel sick, they must access the health services to cure their sickness. If they are seriously sick, they must go to the nearest health center. This was consistent with several studies (Arunya Manit, 1997; Wannee Chansawang, 2002; Patcharee Thongpae, 1997) which demonstrated the considerable factors for health care unit selections. These included quick services, convenient services, good location,

closed to their houses, convenience in transportation and quality of the service equivalent to public hospitals.

2.2 In terms of reasons for receiving and refusing services at the health center of the non-insulin dependent diabetics, the study showed that

- Reasons for receiving the health services at the health center

The reasons that most of the diabetics received the health services at the health center were convenience in travelling and the short distance to the health center. This was comparable to the study by Kusol Sunthontada and Worachai Thongthai (1996) who studied characteristics of the people who received the health services and factors influencing the selection of services at private hospitals. They found that the most important reasons for selecting any health care units were the short distance from their houses, convenience in travelling to the health centers and satisfaction on services of the health center staff (21.57%). In this study, the samples were satisfied with the fast, polite and friendly services of the health center staff according to Webb (1994) who claimed that friendly words and actions persuaded people to receive the services. In addition, the samples stated that receiving health services at the health center save more time and money in travelling than to the hospital (31.98% vs. 9.80%).

- Reasons for refusing health services at the health center

One quarter (30.30%) of the samples refusing health services at the health center explained that they had no signs of diabetes, so it was not necessary for them to have the diabetes cured. This may be because these diabetics had very low blood

glucose levels that no signs of diabetes could be observed as well as no symptoms of complicating diseases. They, therefore, didn't realize that they still had been sick of diabetes. Half of the diabetics in this group refused to see the doctor. In fact, if they had their blood glucose examinations, they would realize how important to see the doctor and receive the treatment properly to delay or reduce the severity of the complicating diseases, particularly the sickness of their eyes and kidneys (Apichart Witchayanrat, 2000). This was agreed with previous studies which revealed that the reasons for refusing the treatment at the health centers were that there were no signs of diabetes, or some diabetics didn't confront the fact that they had been sick of diabetes. In addition, some thought that the diabetes had been successfully cured so there was no need to continue their treatment. Moreover, some diabetics preferred to have the diabetes treated with herbal medicines while some felt that it was inconvenient to travel to the health center. Besides, some worked as the governmental officials so they could reimburse their expenses. In other words, they had more choices in selecting the public health care units (Nakhon Moonnum, 1998; Witaya Sawasdiwatipong and others, 1995; Uranee, 1997; Sakaorat Chaisunthorn, 2000; Tara Onchomchan, 1995). Tara Onchomchan (1995) demonstrated that the factors affecting the selection of health centers were reimbursement of the expenses and economics status. This was consistent with the study by Suparat Paisarntuntiwong (1997) who found that there were many types of health care services in Thailand, for instance, monks, traditional herbal medical experts, pharmacists', private clinics, public hospitals and private hospitals. Thus, there were a variety of health care units for Thai people to select for their appropriateness.

2.3 Regarding to factors related to knowledge, health perception, social support and levels of satisfaction between the diabetics receiving and refusing health services at the health center, the study revealed that there were significant differences between the two sample groups ($P<0.01$).

- Knowledge about self-care of non-insulin dependent diabetics

The knowledge about self-care was significantly different between the diabetics receiving and refusing health services at the health center ($P<0.01$). This implied that the persons who had good knowledge in any subject could perform that certain subject better than those who had no knowledge in that subject (Orem, 1985). It is likely that those receiving health services at the health center have better knowledge about self-care, so they pursue the continuous treatment at the health center. When considered the knowledge levels by items, the two sample groups had better understandings about advantages of exercises. It was noted that during the informal interviews, the samples knew about the advantages of diet control, particularly rice, starch and sugar. However, they didn't understand about the feed conversion. Moreover, they didn't cook for their own, but their family members like their couples, daughters or daughters-in-law cooked for them. These people knew only that the diabetics should avoid foods like sweets and desserts, reduce the amount of rice, but they didn't know the types of foods that could be replaced the avoided foods. It must be the job of the health center staff to generate this knowledge to the diabetics and their family members. It is also important to educate the people about the appropriate diets for the whole family. To have only one set of food for the whole family and no special food for the diabetics is one of the reasons for the failure of blood glucose control.

In general, the two sample groups had very poor knowledge about advantages of exercises for the diabetics. This may be due to the failure of information dissemination by the health center staff, which was consistent with the study by Manit Chaichannarong (1988). He studied health care management for the diabetics at the health centers and found that the diabetics had very poor knowledge about the diabetes because of the conventional methods in public health education. In other words, the suggestions of the health staff cannot draw more attention from the diabetics and the methods in information dissemination, for example, visual aids, and teaching materials are not attractive enough. Moreover, no evaluation on the diabetics' interests and comprehension has been done. In addition, other factors, for instance, economical situations and occupations force the diabetics to pay more attention on than on their sickness. It is, therefore, important to provide the appropriate methods to educate the diabetics based on their cultures, economics and beliefs.

- Health perception of non-insulin dependent diabetics

There were significant differences in health perception between the two sample groups ($P<0.01$). It can clearly be seen that health perception had the positive relationships with behaviors in receiving and refusing health services at the health center. In other words, the diabetics receiving health services were aware of various health conditions, so they pursued the appropriate methods of prevention or had health examination more often than those refusing health services at the health center. This was in agreement with the study by Raenu Kawila (1994) who investigated health beliefs on cancer and cancer examination, Sunkampaeng district, Chiengmai province. She found that health beliefs had significant relationships with the uterus cancer

examination. This was also consistent with the study by Intraporn Promprakan (2002) who explored the relationships between health perception on social support and behaviors in self-care of the elderly diabetics at Community Hospital, Angthong province. She found that the diabetics with higher scores of health perception had better self-care than those with lower scores. This may be because the one who had good knowledge in any subject would respond to their perception by the performance based on the perception they had. If they had good perception on their health conditions, they would take good care of themselves.

- Satisfaction on services of the health center

Significant differences were observed in satisfaction on services of the health center between the two sample groups ($P<0.01$). For the diabetics receiving health services at the health center, the highest level of satisfaction was expressed on quick services of the health center comparable with the previous studies (Suwadee Choosuwan, 200; Benjamas Sirikamonsatien, 1999; Manit Teeratantikanon, 1997). This implied that the service providers are well-prepared and can respond to the needs of the patients appropriately. Moreover, the operation and management are good enough to provide fast and appropriate services (Benjamas Sirikamonsatien, 1999). This is in contrast with some previous studies (Sakawadee Duangden, 1966; Panee Saenchareon, 1996; Worachai Thongthai, 1996) which revealed that public hospitals could improve their services to be faster and the patients had negative attitude on fast services since they had to wait for the examination for almost 1 hour. They also indicated that the waiting time was quite long to too long.

For those refusing health services at the health center, the lowest satisfaction was about the working hours of the diabetes clinic at the health center (07.00-12.00 a.m). This may be one reason why a lot of diabetics refused the services at the health center. Most of them were para-rubber farmers and had to work in the morning, so they had no time to access the services at the health center. It was noted that both sample groups suggested the health center to provide the diabetes clinic full day so that it is suitable to their ways of life.

In short, although there are some limitations in service provision, for instance, the unsuitable working hours, the health center can provide services at the satisfactory levels, particularly in the areas of expenses, hospitality of the staff, advice for the diabetics, quick services and informal conversation with the family members while waiting for doctor's examination. It was also found that most of the diabetics prefer to continue to receive the services at the health center due to fast services, cheaper expenses, and convenience in traveling. These can be used as the indicators for the success of the services at the health center. This was comparable to the study by Lynch and Zulor (cited in Ankana Leetoechawalit, 2000) who indicated that there were three factors on service satisfaction: (1) satisfaction after receiving the services, (2) impression from the previous services and (3) beliefs, knowledge, and ability of the service providers. To evaluate the satisfaction levels of the diabetics who had never accessed the health center services, they were interviewed at their own houses. It was found that the samples knew about the services of the health center from their family members, relatives and neighbors. The information from these people influenced their decision in selecting health care units. In this present study, the study on satisfaction on

the health center services was not conducted with this sample group as they had no experience in the health center services.

- Results of blood glucose control during 3 months of treatment

This was the evaluation of the effectiveness the non-insulin dependent diabetes treatment at Ban Khaoro health center. Most of the diabetics had their blood glucose control (74.68%) indicating the effectiveness of the treatment. About 13.72% could occasionally control their blood glucose levels while only 9.80% could not control their blood glucose levels. This is the responsibility of the health center staff to educate this group of people as well as their family members about the fact about the diabetes and the appropriate ways of life for the diabetics. Although the results of the blood glucose levels were at the satisfactory levels, it cannot reflect the real behaviors of the diabetics as the values of the blood glucose levels were the records of the FBS values. It was possible that the diabetics controlled their blood glucose levels just a short time before they had their blood examinations. The diabetics may not have continuous control of their blood glucose levels. In other words, the results obtained from the three-month records may only be the results of the temporary behaviors. Therefore, the 3-month follow-up sessions may be too short for any determinations including the diabetes treatment, the effectiveness of the treatment, and the complicating diseases. The examination of glycosylated hemoglobin (HbAlc) levels which is very popular nowadays (for normal people will have the level of HbAlc at 3-6% but it will be reached 10-12% for the abnormal ones) may be more suitable for indicating the results of the blood glucose control during 180 days. This is because this

method can provide more accurate result of diabetes controls. Such limitation should taken into consideration for further study.

In addition, most of the samples work as farmers in the para-rubber plantation, and the rubber sheeting procedures require a long time to finish the process, so the farmers will have their breakfast at uncertain time. Moreover, the farmers prefer only a light meal for their breakfast like hot drinks with some Chinese doughnuts or sticky rice; this prevents them from having unsweetened foods. In other words, it is difficult to change their eating habits. Another difficulty for controlling the blood glucose levels is a wide variety of local fruits such as mangoes, rambutans and durians. Actually, the objective of blood glucose control for the diabetics is to maintain the blood glucose level at almost the same level as the normal since this can prevent them from any complicating diseases (Thep Himathongkam, 2004).

To investigate Factors related to utilization behavior of noninsulin dependent diabetes mellitus patients At Ban Khaoro Health Center, Thung Song District Nakhon - Si -Thammarat Province

- The results showed that among the total 84 non-insulin dependent diabetics, only 51, accounting for 60.71% accessed health services at the health center and 33 diabetics (39.29%) refused the health services. The main reasons for those receiving services at the health center are convenience in transportation (19 diabetics, 37.25%), less expenditure (16 diabetics, 31.38%), service satisfaction (11 diabetics, 21.57%), and

close to their houses (5 diabetics, 9.80%). The main reasons for those refusing health services include no signs of diabetes (10 diabetics, 30.30%), inconvenience in transportation (7 diabetics, 21.21%), receiving health services at other health care units (5 diabetics, 15.15%), treatment with herbal medicines (5 diabetics, 15.15%), wrong belief that the diabetes had been cured (5 diabetics, 15.15%), and dissatisfaction in services (1 diabetics, 3.04%).

- When comparing the differences between the two groups, it was found that there were significant differences in sexes, marital status, occupations, complicating diabetes, knowledge about diabetics, health perception, satisfaction in time, distance and convenience in transportation.

- In terms of blood glucose controls, most of the those receiving services at the health center (39 diabetics, 76.48%) could successfully control their blood glucose levels, about 7 (13.72%) could occasionally control their blood glucose levels while only 5 diabetics (9.80%) could not control their blood glucose levels.

- Strong points or advantages of the present study are that the health center can apply the information of the study for the improvement of the health care service. The reasons for receiving or refusing the health services at the health center should be investigated as well as the real needs of the

diabetics. The information obtained should be analyzed and consequently, the services that can meet the needs of the diabetics can be provided. This can also assure that more diabetics under the responsible areas can get the appropriate continuous treatment from the health center. Moreover, it can help reducing the crowded conditions of the diabetes clinic at the hospital.

- Weak points or disadvantages of the present study are that the study emphasized on the behaviors of the diabetics. The changes of the behaviors take some time so it is quite difficult to evaluate the consequence of the study during the experimental period. To obtain the reliable result, it requires a long –term experiment.

In short, although there are some limitations in services but the health center can provide services at the satisfactory levels, particularly in the areas of expenses, hospitality of the staff, advice for the diabetics, quick services and informal conversation with the family members while waiting for doctor's examination. It was also found that most of the diabetics and their family members prefer to continue to receive the services at the health center due to fast services, cheaper expenses, and convenience in travelling. These can be used as indicators for the success of the services at the health center.

3. Suggestions and Implications

Based on the present study, the health center should improve the health care services in order to cover larger areas and the higher number of the target groups. Various strategies should be implemented.

3.1 The time for rubber-sheeting procedures is the same time as the working hours of the doctors at the health center. This causes the diabetics to miss the doctor's appointments and examinations. In addition, the limitations in distance and inconvenience in travelling to the health center contribute to the refusal of health services. It is, therefore, the health center staff's duty to find the suitable solutions, for example, increasing the working hours of the diabetes clinic from half day service to full day service or increasing the service day from once a month to once a week. For the limitations in distance, time and inconvenience of travelling, the active programs from treatment when becoming sick to preventive measures such as health promotion, active approaches in disease control and prevention and home visits and follow-up activities are strongly recommended. The advantages of home visits are the follow-up of the consequences of the treatment and the better knowledge about the diabetes, leading to the effective treatment of diabetes. This is very important for the chronic diseases. The criteria for following-up the patients and the responsibilities of the staff should be provided.

3.2 In views of the knowledge of the diabetes, most of the diabetics have poor knowledge about the advantages of exercises. It is necessary to find out the reasons, for example, insufficient information dissemination, or information too difficult to

ต้นฉบับ หน้าขาดหาย

results and faster identifying processes. This would reduce the probability of complicating diabetes.

3.8 Meetings and training to generate knowledge to family members of the diabetics or the people who take care of the diabetics so that they have better understanding about the diabetes. These people are very important in supporting and encouraging the diabetics to have appropriate and continuous self-care.

3.9 The health care service model in diabetes treatment at the health center should be extended to other health centers so that these health centers, which are the primary care units, can learn and obtain new experiences. This will lead to the development of health care services, particularly for the diabetics who have limitations in travelling to Ban Khaoro health center. This would encourage the diabetics to have continuous diabetes treatment at any primary care units

3.10 In this present study, only the consequences of blood glucose controls the diabetics who received the health care service at Ban Khaoro health center had been followed up. Therefore, the consequences of blood glucose controls of the diabetics receiving the health care services cannot be compared with of those refusing the health care services at the health center.

4. Recommendations for Further Study

4.1 The quantitative study should be conducted together with the qualitative study and various approaches of data collection should be applied, for example, survey, interview and observations to ensure that the information is validated.

4.2 In this study, the follow-up sessions of blood glucose levels had been done within 3 months. It tends to be too short to assume the effectiveness of the treatment as well as the determination of the complicating diseases. The glycoslated hemoglobin (HbAlc) should be included in the further study for more accuracy of the study regarding to the effectiveness of the diabetes control.

4.3 In areas of factors affecting behaviors in receiving and refusing services at the health center, people receiving health services, the authorities providing health services and the health center staff should be taken into account for further study. This is because the actual factors affecting the behaviors in receiving the health care services can be clearly identified.

4.4 Since the interviews in this study had been done by the health care staff, the information obtained may be inaccurate resulting from the familiarity of the interviewees and the interviewer. For further study, research assistants who are not the local people in that area are recommended for conducting the interview.

4.5 A study on opinions and requirements on participation in diabetes control of the diabetics, the family members and the health center staff is suggested.

4.6 A study on strategies in encouraging the elders aging over 40 years old to participate in the early stage of diabetes diagnosis program should be conducted to assure the practical actions.

4.7 A similar study on other chronic diseases such as hypertension should be taken into considerations.

4.8 This study is a part of the system of diabetics care services. There are some more important concerns, for instance, the equality in health care service access, the participation of communities in diabetes prevention as well as complicating diabetes prevention. A further study to build up body of knowledge is necessary for the better health care service system in the future.