CHAPTER 5

CONCLUSION AND RECOMMENDATIONS

This chapter is divided into four parts: conclusion of findings, implications of findings, limitations, and recommendations for further research.

Conclusion of Findings

The randomized control trial study with two groups (self-management support group and standard care group) was conducted to examine the effects of a Self-management Support Program for People with Metabolic Syndrome on eating behaviors, physical activity, and metabolic control in Chiang Mai Thailand. The objectives of this study were to compare eating behaviors, physical activity, and metabolic control between before and after entering the program of duration three and six months, and between people with metabolic syndrome received the self-management support program and those received standard care.

The intervention was conducted during eleven months, March 2011 to January 2012. Study approval was obtained from the Research Ethical Committee of Faculty of Nursing, Chiang Mai University. The sample was recruited from three hospitals in Chiang Mai, Northern region of Thailand. Ninety-two participants who met the inclusion criteria were randomly assigned to either the self-management support program or standard care using the mixed permuted block 4 and allocation concealment method. Participants completing the study protocol were 86 (93.48%

retention) including 44 participants in the self-management support program group and 42 participants in the standard care group. The drop out rate was 6.52%, due to individuals moving to other provinces, no longer being in need of additional health checks, and no longer having available time to participant.

The experimental group received the Self-management Support Program for People with Metabolic Syndrome (SSPPMS) based on self-management using the 5A's model of Glasgow and colleagues. This program lasted three months included six sessions; once a week for the first four weeks, then monthly for the second and third months. The sessions covered one education (diet and physical activity) session, three self-management skill training sessions, and two discussion sessions. Small group sessions were held with three to four members in four education and discussion sessions (120 minutes/session), lead by the researcher.

The comparison group received standard care based on the 2010 Clinical Practice Guidelines in Diabetes, Hypertension, and Dyslipidemia Control of the Ministry of Public Health Thailand including health assessments, giving advice about their conditions, and treatment advice. Registered nurses who work in diabetes/hypertension clinic provided health education.

The instruments used for data collection were the Demographic Data Form, the 7-day Food Diary, and the Physical Activity Log book. The criteria validity of the 7-day Food Diary was 0.896. The test-retest reliability of the 7-day Food Diary was 0.78. The criteria validity of the Physical Activity Log book was 0.90. The two week test-retest reliability of the Physical Activity Log book was 0.93. Data pertaining to metabolic control included waist circumference that was collected using the anthropometry tape, and systolic and diastolic blood pressure that was measured using

the OMRON IA2 automatic blood pressure equipment. Blood samples were collected for testing blood glucose, triglyceride, and HDL cholesterol levels. The blood tests were conducted at the Faculty of Medical Technology lab in Chiang Mai University. Data for both groups was collected at baseline, the end of the program, and three months after the end of the program.

Descriptive statistics were used to analyze demographic data and clinical characteristics. Independence t-test and chi-square tests were used to examine the difference of characteristics between experimental and control groups at baseline. The Mixed Model ANOVA with Repeated Measures was conducted to examine the difference in mean score of eating behaviors, physical activity, and metabolic control between both groups and between three points of measurement. Since there was an interaction between the factors which distorted the assumptions of the Mixed Model ANOVA with Repeated Measures, the t-test and one way repeated ANOVA were administered to test the simple effect.

Demographic characteristics of the participants revealed that most of participants in the self-management support program and standard care groups were women (93.2%, 71.4%, respectively). The mean age in the two groups range from 59.57 (SD = 9.99) to 62.67 (SD = 7.89). Most participants in the self-management support program (38.6%) received no medical treatment and 18.2% received antihypertensive drugs plus lipid-lowering drugs. Similarly, most participants in the standard care group (29.5%) did not receive medication and 20.5% received antihypertensive drugs. Analysis of demographic data at baseline indicated non-significant differences between the self-management support program and standard care groups.

The finding from this study revealed that

1. Eating behaviors among people with metabolic syndrome received the self-management support program at both the end of the program and three months after the end of the program were not significantly better than those before participating in the program.

2. Physical activity among people with metabolic syndrome received the self-management support program at both the end of the program and three months after the end of the program were significantly higher ($p < .01$) than those before participating in the program.

3. Metabolic control including systolic and diastolic blood pressure among people with metabolic syndrome received the self-management support program at both the end of the program and three months after the end of the program were significantly lower ($p < .01$) than those before participating in the program.

4. Metabolic control including waist circumference and HDL cholesterol among people with metabolic syndrome received the self-management support program at only three months after the end of the program were significantly better ($p < .01$) than those before participating in the program.

5. Metabolic control including blood sugar and triglycerides among people with metabolic syndrome received the self-management support program at both the end of the program and three months after the end of the program were not significantly better than those before participating in the program.

6. Eating behaviors among people with metabolic syndrome received the self-management support program at both the end of the program and three months

after the end of the program were not significantly better than those received standard care.

7. Physical activity among people with metabolic syndrome received the self-management support program at both the end of the program and three months after the end of the program was significantly higher ($p < .01$) than those received standard care.

8. Metabolic control including blood sugar and HDL cholesterol among people with metabolic syndrome received the self-management support program at only three months after the end of the program were significantly better ($p < .01$) than those received standard care.

9. Metabolic control including waist circumference, systolic and diastolic blood pressure, and triglyceride among people with metabolic syndrome received the self-management support program at both the end of the program and three months after the end of the program were not significantly better than those received standard care.

Implication of Finding

Based on the study results, the self-management support program increased physical activity and improved HDL cholesterol and blood glucose. This finding can contribute to nursing science and be applied for nursing administration and nursing practice, and as follow:

Contribution to Nursing Science

The findings of this study reveal the relationship between self-management support and disease control. To control metabolic syndrome, self-management support includes nursing activities namely 5As including assess, advise, agree, assist, and arrange. The designated program related to 5As helps patient change their behaviors and controls their disease. The results of this study have proved that the change of physical activities through the designated program do help reduce the blood sugar level, and increase HDL cholesterol level. It can serve as the theory for practice or "micro theory". Nurse can use this knowledge to prescribe the proper behaviors, eating and physical activities, to this group of patients.

Implication for Nursing Practice

OPD nurse may use the SSPPMS and its strategies in both controlled and uncontrolled metabolic syndrome patients. The provision of the program to patients who can control metabolic risk parameters would help maintain the proper behaviors, while in those who fail to control the disease, the program would prevent the deterioration of the disease. This program can be integrated into regular services at diabetes or cardiovascular clinics in either secondary care settings or primary care settings. In secondary care settings, nurse can apply the entire SSPPMS to all new diagnosis patients to increase their knowledge and skills needed for self-management. In primary care settings, nurse can work collaboratively with the secondary care setting and use either the whole program or some parts of the program to monitor the patients' behaviors and outcome and assist them to effectively control their disease.

Implication for Nursing Administration

Nurse administrators may propose the SSPPMS as the agenda to establish healthcare policy for healthcare service, especially at the out-patient department (OPD). It is already proved that the program gain better outcomes than the traditional method. When the SSPPMS is launched to practice, nurse administrators should plan to train nurses regarding motivational interviewing techniques, goal and action plan setting techniques, and problem solving techniques. The target group of nurses to be trained should be those who are involved in case of the people with metabolic syndrome. It is anticipated that nurses with acquired self-management support skills can be the specialist. Then, they are capable of enhancing patients to improve eating behaviors, physical activity and metabolic control and disease can be controlled as a result.

The Limitation of this Study

The study had some limitations that may have influenced on generalizability of the results.

1. Although randomization was used to decrease the effects of extraneous variables, participants were not balanced in term of gender. As the majority of participants were females, the finding may not be well generalizable to males.

2. The present program excluded home blood pressure monitoring even it was reported as one of the factor affecting hypertension control. This may provide

the rationale of why the program showed reduces not significantly the patients' blood pressure.

Recommendation of the Further Research

Based on the limitations of the present study, recommendations for further study include the following:

1. Replication of the study with equal number of males and females participating is needed to broaden the generalization of the study.

2. Home self-monitoring of blood pressure needs to be included in the program. This monitor could vary from once a day to once a week depends on participant's blood pressure. Home self-monitoring of blood pressure may better improve blood pressure control.