

Selected Factors of Perceived Self-Efficacy and Outcome Expectations Affecting Self-Care Behavior of Diabetic or Hypertension Patients at Mittraphap Subdistrict Health Promoting Hospital, Muak Lek District, Saraburi Province, Thailand

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Abstract

Introduction: Self-efficacy is the main part of health and the care of Diabetes Mellitus or Hypertension (high blood pressure). Therefore, the researcher is interested in studying the selection factors of perceived self-efficacy, and the outcome expectation that affects self-care behavior of the diabetic or hypertension patients treated at Mittraphap Sub-district Health Promoting Hospital, Muak Lek District, Saraburi Province, Thailand.

Methods: The sample consisted of eighty-six patients. Sample size determination using Krejcie and Morgan table. The data was gathered by using questionnaires which were composed of (1) demographic data, (2) measuring self-care behavior, perceived self-efficacy, and outcome expectations in 3 aspects. The questionnaire was tested for validity and reliability. The reliability was 0.93. The data was analyzed by using frequency, percentage, mean, standard deviation, one-sample t-test and stepwise-multiple regression correlation coefficient.

Result: According to the result of the present study, 67.44% of the correspondents were female, 44.19% were between 60 - 69 years old, 72.09% have hypertension, 10.47% with diabetes, 17.44% were diagnosed with both diabetic and hypertension, 76.74% were married, 63.95% were elementary school graduates, 37.21% engaged in general employment/company, the average income of all family members together per month were 5,001 - 10,000 baht or 33.73%. Research findings revealed as follows: (1) One sample t-test demonstrated that all of the respondents' self-care behavior, perceived self-efficacy, and outcome expectations as a whole and each aspect were at a high level when compared with the set criteria (60%) at the .05 level of significance (mean = 3.80, 3.83 and 4.11 respectively). The analysis by Stepwise-Multiple Regression Correlation shows that out of 64 variables, there are 8 important factors, [They are 1) being able to exercise at least 3 - 5 times a week (Perceived self-efficacy regarding physical exercise), 2) recognizing the problems of suffering in the family and can solve the problem (Perceived self-efficacy regarding stress management), 3) recognizing emotions such as anger and sadness and being able to control it (Outcome expectations regarding stress management practices), 4) choosing the exercise workout that is suitable for you (Perceived self-efficacy regarding physical exercise), 5) consumption of fish daily (Outcome expectations regarding nutrition), 6) abstaining from or avoiding alcoholic beverages (Perceived self-efficacy regarding nutrition), 7) drinking 6 - 8 glasses of clean water every day (Outcome expectations regarding nutrition) and 8) abstaining from or avoiding the consumption of shrimp, squid, streaky pork, offal, and eggs can help reduce the cholesterol and control the symptoms of diabetes and normalize the blood pressure (Outcome expectations regarding nutrition)].

Conclusion: Where all of these 8 factors could explain the variations or predict the self-care behaviors of diabetic or hypertension patients by 79.1% which is statistically significant at .05. The best factor significantly predicting self-care behavior (47.8%) is being able to exercise at least 3 - 5 times a week (Perceived self-efficacy regarding exercise).

Keywords: *Self-Care Behavior; Perceived Self-Efficacy; Outcome Expectation; Diabetic Patient; Hypertension Patient*

Introduction

Diabetes Mellitus or Hypertension (high blood pressure) are chronic non-communicable diseases that are public health problems of the world and Thailand. Data from the World Health Organization (WHO) reported that the number of people with diabetes increased from 108 million in 1980 to 422 million in 2014, and in 2016 diabetes caused 1.5 million deaths and another 2.2 million deaths due to high blood sugar [1]. Worldwide, 7.5 million people died of hypertension and an estimated 1 billion people worldwide have hypertension. It is estimated that by 2025, the prevalence will increase to 1.56 billion [2].

As for the situation in Thailand, the trend of having diabetes per 100,000 population in 2014 - 2018 is 5095.9, 5267.3, 5344.8, 5726.6, and 5981.4, respectively. This is consistent with the information from the Strategy and Planning Division, The Ministry of Public Health, where it is found that the trend of diabetes mortality per 100,000 people in 2014 - 2018 was 17.5, 19.4, 22.3, 22.0 and 21.9 respectively [1]. High blood pressure is still a health problem as well. This is evident in the prevalence of hypertension increases, in the population of 15 years of age and above, from 10 million in 2009 to 13 million in 2014 and nearly half of them were unaware of the disease. The number of patients with hypertension is likely to increase from nearly 4 million in 2013 to nearly 6 million in 2018. The number of deaths caused by hypertension is also likely to increase from 5,186 in 2013 to 8,525 in 2017 [2].

To treat patients with Diabetes Mellitus or Hypertension, health behavior adjustment is the most important thing because it is the main factor that makes it possible to control the disease sustainably [3] by focusing on behavior in three categories which are nutrition, physical exercising regularly, and stress management. Taking medication continuously in conjunction with controlling diet is also important. Patients with high blood pressure and diabetes have to change their lifestyles. There must be a limit to the amount of food or an avoiding of foods that you once enjoyed, control of blood sugar and blood pressure levels, control of their weights, payment for the diagnosis and treatment until there is an impact on their social participation. These things result in stress. If people with diabetes and high blood pressure cannot manage stress, it will result in lower levels of life satisfaction [4].

As for Saraburi, it was reported that the number and mortality rate of hypertension and diabetes patients in 2016 - 2017 are as follows; the number of deaths from hypertension is 63 and 71 per 100,000 population and the number of people who died of diabetes is 111 and 88 people per 100,000 population [1]. For Mittraphap Subdistrict Health Promoting Hospital at Muak Lek District, Saraburi is the Health Promoting Hospital working under the Ministry of Public Health which is responsible for taking care of the people in Mittraphap Sub-district area. Most of the clients who came to the treatment had a history of chronic diseases at a high rate such as diabetes and high blood pressure and these diseases tend to increase every year.

Therefore, the researcher is interested in studying the selection factors of perceived self-efficacy, and the outcome expectation that affects self-care behavior of the diabetic or hypertension patients treated at Mittraphap Sub-district Health Promoting Hospital, Muak Lek District, Saraburi. This is another sub-district health-promoting hospital under the supervision of the Muak Lek District, Public Health Office, as well as Langkao health promoting hospital, and Saonoi health-promoting hospital to see a clearer picture by applying the Self-efficacy Theory of Bandura [5] and the three categories of behavior (Nutrition, Physical exercise, and Stress management) as a guideline in the study by focusing on chronic diseases that are common in the community which are diabetes and hypertension. The results obtained from this study will provide the basis for the selection factor for perceived self-efficacy and the outcome expectation that affects self-care behavior of the diabetic or hypertension patients treated at Mittraphap Sub-district Health Promoting Hospital, Muak Lek District, Saraburi, and the result is also used as information to take care of the diabetic or hypertension patients treated at Mittraphap Sub-district Health Promoting Hospital, Muak Lek District, Saraburi to prevent them from becoming homestay or bed-bound patients, to prevent and reduce the occurrence of complications and to improve the patient's quality of life.

Methodology

This research is a survey study: 1) to study the level of self-care behavior, perceived self-efficacy and, the outcome expectations of the diabetic or hypertension patients; 2) to analyze the selection factors of perceived self-efficacy and the outcome expectations of the diabetic or hypertension patients treated at Mittraphap Sub-district Health Promoting Hospital, Muak Lek District, Saraburi. The population in this research is the chronic disease patients listed in the database of those who are treated at Mittraphap Sub-district Health Promoting Hospital, Muak Lek District, Saraburi with a total of 90 people. The sample size was estimated by using the Krejcie and Morgan Table (Krejcie and Morgan, 1970, cited in Srisai, 2008), the sample size of 73 subjects was obtained [6]. To prevent the error in data collection, thus increasing the sample size by 30% so the sample size was 86 subjects. The sample was the selection by purposive sampling with criteria of being diabetic or hypertension patients treated at Mittraphap Sub-district Health Promoting Hospital, Muak Lek District, Saraburi who can speak and communicate in Thai.

The tools are adopted from the research of Saminpanya., *et al.* (2018). The data collection questionnaire for diabetic or hypertension patients consisted of 4 sections [7]:

1. Section 1: General information about the population group consisting of gender, age, underlying diseases, marital status, education level, career, and income.
2. Section 2: Perceived self-efficacy in promoting diabetic or hypertension patient's health, consisting of nutrition, physical exercise and stress management on a five-point rating scale questionnaire with a format of positive response questions (most, very, moderate, little, least).
3. Section 3: Outcome expectations in promoting the health of diabetic or hypertension patients, consisting of nutrition, physical exercise, and stress management on a five-point rating scale questionnaire (strongly agree, agree, somewhat agree, disagree, strongly disagree).
4. Section 4: Behavior of nutrition, physical exercise and stress management of diabetic or hypertension patients consisting of the frequency of self-care behavior in promoting health on a five-point rating scale (routinely, very often, often, sometimes, rarely). The criteria and interpretation of the perceived self-efficacy, outcome expectations, and self-care behavior are calculated by using class interval [8] and divided into five levels: a) the highest level-average score = 4.21 - 5.00, b) high level-average score = 3.41 - 4.20, c) intermediate level-average score = 2.61-3.40, d) low level-average score = 1.81 - 2.60 and e) the lowest level - average score = 1.00 - 1.80.

Reliability testing of the questionnaire, which is composed of items regarding perceived self-efficacy, outcome expectations, and self-care behavior, was tested with diabetic or hypertension patients at Langkao Sub-district Health Promoting Hospital, Muak Lek District, Saraburi Province. This patient group of 44 offers similar research criteria to our study. Results were calculated as a reliability coefficient using Cronbach's Alpha Coefficient Method. The reliability of each section, which is perceived self-efficacy, outcome expectation, and self-care behavior, was 0.85, 0.92, and 0.83, respectively. The total reliability of this questionnaire was 0.93.

Statistical analysis of the questionnaire respondents in frequency and percentage. Statistical analysis as indicated under Objective 1 by mean (\bar{x}) and standard deviation (S.D.), and one sample t-test (Statistical significance of the mean of one group with the set criteria of 60% or 3 in 5 according to the 5-level approximation scale), the interpretation of the data as follows:

- 1) If the mean is above the criteria 3.0 according to the 5-level estimation scale or 60% and $p < .05$, it is considered high.
- 2) If the mean is close to the criteria of 3.0 or 60 percent and $p > .05$ is considered moderate.
- 3) If the mean is below the threshold of 3.0 or 60 percent and $p < .05$ is considered low.

Statistical analysis as indicated under Objective 2 by Stepwise-Multiple Regression Correlation Coefficient as follows.

Results

There were 86 respondents from diabetic or hypertension patients treated at Mittraphap Sub-district Health Promoting Hospital. Of these, 67.44% were female, 44.19% were between 60 - 69 years old, 72.09% have hypertension, 10.47% with diabetes, 17.44% were diagnosed with both diabetic and hypertension, and 76.74% were married, 63.95% were elementary school graduates, 37.21% engaged in general employment/company, the average income of all family members together per month were 5,001 - 10,000 baht or 33.73%, followed by between 600 - 5,000 baht or 26.74%, as shown in table 1.

Demographic	Number	Percent
Gender		
Male	28	32.56
Female	58	67.44
Age		
30 - 49 years old	9	10.47
50 - 59 years old	15	17.44
60 - 69 years old	38	44.19
70 - 79 years old	16	18.60
80 years old and above	8	9.30
Underlying diseases		
Diabetes Mellitus	9	10.47
Hypertension	62	72.09
Diabetes Mellitus and Hypertension	15	17.44
Marital status		
Single	8	9.30
Married	66	76.74
Divorce	1	1.17
Widow	11	12.79
Education level		
No School	12	13.95
Elementary	55	63.96
High School	14	16.28
Bachelor Degree	5	5.81
Occupation		
Agriculture	14	16.28
Merchant	11	12.79
Hired Employees	32	37.21
Civil Servants	2	2.33
Unemployed	27	31.39
Living Income per month (THB)		
600 - 5,000	23	26.74
5,001 - 10,000	29	33.72
10,001 - 15,000	4	4.66
15,001 - 20,000	1	1.17
20,000 - 25,000	5	5.81
25,001 - 30,000	6	6.97
30,001 and above	18	20.93

Table 1: Demographic of questionnaire respondents (Sample N = 86).

Self-care behavior, perceived self-efficacy, and outcome expectations of the diabetic or hypertension patient’s practice treated at Mittraphap Sub-district Health Promoting Hospital, Muak Lek District, Saraburi. When considering the overall picture of each patient, it was found that the diabetic or hypertension patients treated at Mittraphap Sub-district Health Promoting Hospital, Muak Lek District, Saraburi has self-care behavior, perceived self-efficacy, and outcome expectations of the practice which were statistically significant at the .05 level with mean values of 3.80, 3.83 and 4.11 respectively (Table 2).

Category		S.D	t-value	Interpretation
1. Self-care behavior	3.80	0.56	13.32*	High
2. Perceived self-efficacy	3.83	0.65	11.74*	High
3. Outcome expectations	4.11	0.72	14.30*	High

Table 2: The mean, standard deviation, t-value and the interpretation of self-care behavior, perceived self-efficacy, and outcome expectations regarding the practice of the diabetic or hypertension patients treated at Mittraphap Sub-district Health Promoting Hospital, Muak Lek District, Saraburi.

After considering each aspect, it was found that almost all items studied; self-care behavior, perceived self-efficacy, and outcome expectations regarding nutrition, physical exercise, and stress management of people with diabetes or hypertension who are treated at Mittraphap Sub-district Health Promoting Hospital were statistically significant at the .05 level (Table 3-5).

Category		SD	t-value	Interpretation
1. Self-care behavior				
Nutrition	3.84	0.51	15.32*	High
Physical exercise	3.76	1.07	6.55*	High
Stress Management	3.78	0.82	8.90*	High
Total	3.80	0.56	13.32*	High

Table 3: The mean, standard deviation, t-value and interpretation of self-care behavior of the diabetic or hypertension patients who are treated at Mittraphap Sub-district Health Promoting Hospital, Muak Lek District, Saraburi.

Category		SD	t-value	Interpretation
2. Perceived self-efficacy				
Nutrition	3.86	0.66	11.93*	High
Physical exercise	3.77	1.07	6.66*	High
Stress Management	3.85	0.81	9.69*	High
Total	3.83	0.65	11.74*	High

Table 4: The mean, standard deviation, t-value and interpretation of the perceived self-efficacy of the diabetic or hypertension patients who are treated at Mittraphap Sub-district Health Promoting Hospital, Muak Lek District, Saraburi.

Category		SD	t-value	Interpretation
3. Outcome expectations				
Nutrition	4.25	0.72	16.50*	High
Physical exercise	4.17	0.88	12.24*	High
Stress Management	3.81	0.95	7.97*	High
Total	4.11	0.72	14.30*	High

Table 5: The mean, standard deviation, t-value, and interpretation of the outcome expectations of the diabetic or hypertension patients are treated at Mittraphap Sub-district Health Promoting Hospital, Muak Lek District, Saraburi.

The analysis by Stepwise-Multiple Regression Correlation among the selection factors of perceived self-efficacy and outcome expectations that influence the self-care behavior of the diabetic or hypertension patients who are treated at Mittraphap Sub-district Health Promoting Hospital, Muak Lek District, Saraburi shows that out of the 64 variables, there are 8 important factors, [They are 1) being able to exercise at least 3 - 5 times a week (Perceived self-efficacy regarding physical exercise), 2) recognizing the problems or suffering in the family and can solve the problem (Perceived self-efficacy regarding stress management), 3) Recognizing emotion such as anger and sadness and being able to control it (Outcome expectations regarding stress management practices), 4) choosing the exercise workout that is suitable for you (Perceived self-efficacy regarding physical exercise), 5) consumption of fish daily (Outcome expectations regarding nutrition), 6) abstaining from or avoiding alcoholic beverages (Perceived self-efficacy regarding nutrition), 7) drinking 6 - 8 glasses of clean water every day (Outcome expectations regarding nutrition) and 8) abstaining from or avoiding the consumption of shrimp, squid, streaky pork, offal, and eggs can help reduce the cholesterol and control the symptoms of diabetes and normalize the blood pressure (Outcome expectations regarding nutrition)]. These factors influence the self-care behavior of people with diabetes or hypertension at Mittraphap Sub-district Health Promoting Hospital, Muak Lek District, Saraburi Province where all 8 of these factors could explain the variations or predict the self-care behaviors of the diabetic or hypertension patients by 79.1% which is statistically significant at .05. It's also found that the best factor was being able to exercise at least 3 - 5 times a week (Perceived self-efficacy regarding exercise), with this single factor predicting the self-care behavior of the diabetic or hypertension patients by 47.8% which is statistically significant at .05 (Table 6).

Model	Factors	R ²	F	Coefficient		t-value	sig
				B	Beta		
1	Being able to exercise at least 3 - 5 times a week (Perceived self-efficacy regarding physical exercise)	0.478	76.82*	.27	.69	8.760*	.000
8	Being able to exercise at least 3 - 5 times a week (Perceived self-efficacy regarding physical exercise)	0.791	36.52*	.14	.35	4.990*	.000
	Recognizing the problems or the suffering in the family and can solve the problem (Perceived self-efficacy regarding stress management)			.15	.29	4.73*	.000
	Recognizing emotion such as anger and sadness and being able to control them which in turns controls the symptoms of diabetes or hypertension to be in the normal range (Outcome expectations regarding stress management practices)			.10	.22	3.61*	.000
	Choosing the exercise workout that is suitable for you (Perceived self-efficacy regarding physical exercise)			.09	.22	3.18*	.000
	Consumption of fish daily to control diabetes symptoms and normalize the blood pressure (Outcome expectations regarding nutrition)			.11	.21	3.50*	.000
	Abstaining from or avoiding alcoholic beverages (Perceived self-efficacy regarding nutrition)			.06	.13	2.43*	.000
	Drinking 6 - 8 glasses of clean water every day can help control the symptoms of diabetes and normalize blood pressure. (Outcome expectations regarding nutrition)			.12	.21	3.08*	.000
	Abstaining from or avoiding the consumption of shrimp, squid, streaky pork, offal and eggs can help reduce cholesterol and control the symptoms of diabetes and normalize the blood pressure (Outcome expectations regarding nutrition)			.09	-.18	-2.69*	.000

Table 6: The summary of the results of the analysis of Stepwise-Multiple Regression Correlation data among the selection factor of perceived self-efficacy and outcome expectations that influence self-care behavior of the diabetic or hypertension patients who received services at the Mittraphap Sub-district Health Promoting Hospital, Muak Lek District, Saraburi.

*P < .05.

Discussion

The level of self-care behavior perceived self-efficacy, and outcome expectations of patients with diabetes or hypertension treated at Mittraphap Sub-district Health Promoting Hospital, Muak Lek District, Saraburi is high which is statistically significant at .05 (by comparing the mean with the set criteria of 60% or 3 in 5 according to the 5-level approximation scale).

From the research results, when considering the overall picture of each aspect of the patient, it was found that the self-care behavior, perceived self-efficacy, and outcome expectations of the diabetic or hypertension patients treated at Mittraphap Sub-district Health Promoting Hospital, Muak Lek District, Saraburi were at a high level compared to the set criteria (60%), which were statistically significant at the .05 level with a mean of 3.80, 3.83 and 4.11 respectively. This is consistent with the hypothesis set which is the result of Mittraphap Sub-district Health Promoting Hospital having a health promotion activity for the people with diabetes or hypertension such as presenting prepared information, doing physical exercises such as stretching to manage the stress and promote the health of people with diabetes or hypertension. It also increases the knowledge about diabetes or hypertension regarding the causes, symptoms, complications, treatment, and self-care. In group discussions, the nurses and public health officials of Mittraphap Sub-district Health Promoting Hospital focused on the ability of the patients to take care of themselves according to the 3 principles. The self-care according to the three principles are being trained to develop skills, being well-experienced in choosing food such as fruits, vegetables, easily digestible meats to promote health by providing energy and vitamins that are beneficial to the body and provide proper nutrition for the diabetic or hypertension patients. As for the suggestions to control body weight, there is a demonstration to do physical exercises by swinging the arms. They also practice self-management by using principles as an anchor for the mind and continue to practice them at home to keep their diabetes or hypertension at a relaxed stage. This also promotes quality health. Therefore, the nurses and health officials will help educate and adjust the behavior of people with diabetes or hypertension who are treated at Mittraphap Sub-district Health Promoting Hospital, Muak Lek District, Saraburi. This will give an overview of each aspect of the diabetic or hypertension patient with almost all items studied were at a high level. This was compared with the statistically significant criteria at the .05 level, which was consistent with the study of Saminpanya., *et al.* (2018). Regarding perceived self-efficacy, outcome expectations, and self-care behaviors in 3 areas (nutrition, physical exercise and stress management) of hypertension patients who are treated at Langkao and Saonoi Sub-district Health Promoting Hospital, Muak Lek District, Saraburi, it was found that the results were at the moderate to a high level [7].

From the analysis of the data, it was found that out of 64 variables, there are 8 important factors, [They are 1) being able to exercise at least 3 - 5 times a week (Perceived self-efficacy regarding physical exercise), 2) recognizing the problems of the suffering in the family and can solve the problem (Perceived self-efficacy regarding stress management), 3) Recognizing emotion such as anger and sadness and being able to control it which in turns controls the symptoms of diabetic or hypertension to be in normal range (Outcome expectations regarding stress management practices), 4) Choosing the exercise workout that is suitable for you (Perceived self-efficacy regarding physical exercise), 5) Consumption of fish daily to control diabetes symptoms and normalize the blood pressure (Outcome expectations regarding nutrition), 6) Abstaining from or avoiding alcoholic beverages (Perceived self-efficacy regarding nutrition), 7) Drinking 6 - 8 glasses of clean water every day can help control the symptoms of diabetes and normalize the blood pressure. (Outcome expectations regarding nutrition) and 8) Abstaining from or avoiding the consumption of shrimp, squid, streaky pork, offal, and eggs can help reduce cholesterol and control the symptoms of diabetes and normalize the blood pressure (Outcome expectations regarding nutrition)]. These factors influence the self-care behavior of people with diabetes or hypertension at Mittraphap Sub-district Health Promoting Hospital, Muak Lek District, Saraburi where all 8 of these factors could explain the variations or predict the self-care behaviors of the diabetic or hypertension patients by 79.1% which is statistically significant at .05. It's also found that the best factor was being able to exercise at least 3 - 5 times a week (Perceived self-efficacy regarding exercise), with this single factor predicting the self-care behavior of the diabetic or hypertension patients by 47.8% which is statistically significant at .05. This corresponds with the research results Saminpanya., *et al.*

(2018), who studied the research on perceived self-efficacy, outcome expectations, and self-care behaviors in 3 areas (nutrition, physical exercise, and stress management) of hypertension patients who are treated at Langkao Sub-district Health Promoting Hospital and Saonoi Sub-district Health Promoting Hospital, Muak Lek District, Saraburi. Most respondents perceived self-efficacy and outcome expectations in these 3 categories can significantly predict self-care behavior alone at the 95.00% ($p < 0.05$) level. The best factor significantly predicting self-care behavior (61.90%) is perceived self-efficacy of stress management ($p < 0.05$) [7]. This is in line with the research of Katan-*yutanont., et al.* (2017) which study the self-care behavior of the diabetic and hypertension patients at one of the health centers in Bang Mueang Sub-district, Samut Prakan Province found that overall self-care behavior was at a good level in each aspect, whether the nutrition, physical exercise, stress management [9]. Treatment and the use of medication are also at a good level but this is not consistent with the research of Pragodpol., *et al.* (2015) which was conducted to study the quality of the life of a diabetic and hypertension patient with and without complications who received treatment at a tertiary care, secondary care center, primary care center and health-promoting center of the sub-district in Saraburi Province with the mean scores of the life-quality of the diabetic and hypertension patients in all aspects is moderate [4]. This is in line with the research of Pragodpol., *et al.* (2015) in which they found in the qualitative research that one of the guidelines for improving the quality of the lives of people with diabetes or hypertension consists of healthy behavioral adjustment, namely nutrition, physical exercise, taking medication and having peace of mind [4]. These findings help the professional who is related in this field to apply the findings to improve the caring method for diabetic or hypertension patients, especially in these 8 important factors. [They are 1) being able to exercise at least 3 - 5 times a week (Perceived self-efficacy regarding physical exercise), 2) recognizing the problems of the suffering in the family and can solve the problem (Perceived self-efficacy regarding stress management), 3) Recognizing emotion such as anger and sadness and being able to control it which in turns controls the symptoms of diabetic or hypertension to be in the normal range (Outcome expectations regarding stress management practices), 4) choosing the exercise workout that is suitable for you (Perceived self-efficacy regarding physical exercise), 5) consumption of fish daily to control diabetes symptoms and normalize the blood pressure (Outcome expectations regarding nutrition), 6) abstaining from or avoiding alcoholic beverages (Perceived self-efficacy regarding nutrition), 7) drinking 6 - 8 glasses of clean water every day can help control the symptoms of diabetes and normalize the blood pressure. (Outcome expectations regarding nutrition) and 8) abstaining from or avoiding the consumption of shrimp, squid, streaky pork, offal and eggs can help reduce the cholesterol and control the symptoms of diabetes and normalize the blood pressure (Outcome expectations regarding nutrition)]. Therefore, health behaviors should be followed up according to the 3 behavior principles. They are nutrition, physical exercise, and stress management. Planning for the development of behavioral modifications in patients with diabetes or hypertension to promote self-care ability leads to a better quality of life.

Conclusion

Results based on the hypothesis of self-care behavior, perceived self-efficacy and outcome expectations of patients with diabetes or hypertension treated at Mittraphap Sub-district Health Promoting Hospital, Muak Lek District, Saraburi is high which is statistically significant at .05 (by comparing the mean with the set criteria of 60% or 3 in 5 according to the 5-level approximation scale. There are 8 important factors, [They are 1) being able to exercise at least 3 - 5 times a week (Perceived self-efficacy regarding physical exercise), 2) recognizing the problems or the suffering in the family and can solve the problem (Perceived self-efficacy regarding stress management), 3) recognizing emotion such as anger and sadness and being able to control it which in turns controls the symptoms of diabetic or hypertension to be in normal range (Outcome expectations regarding stress management practices), 4) choosing the exercise workout that is suitable for you (Perceived self-efficacy regarding physical exercise), 5) consumption of fish daily to control diabetes symptoms and normalize the blood pressure (Outcome expectations regarding nutrition), 6) abstaining from or avoiding alcoholic beverages (Perceived self-efficacy regarding nutrition), 7) drinking 6 - 8 glasses of clean water every day can help control the symptoms of diabetes and normalize the blood pressure. (Outcome expectations regarding nutrition) and 8) abstaining from or avoiding the consumption of shrimp, squid, streaky pork, offal, and eggs can help reduce the cholesterol and control the symptoms of diabetes and normalize the blood pressure (Outcome expectations regarding nutrition)]. These factors influence the self-care behavior of people with diabetes or hypertension

at Mittraphap Sub-district Health Promoting Hospital, Muak Lek District, Saraburi Province where all 8 of these factors could explain the variations or predict the self-care behaviors of the diabetic or hypertension patients by 79.1% which is statistically significant at .05. It's also found that the best factor was being able to exercise at least 3 - 5 times a week (Perceived self-efficacy regarding exercise), with this single factor predicting the self-care behavior of the diabetic or hypertension patients by 47.8% which is statistically significant at .05.

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