FACTORS INFLUENCING SELF-CARE BEHAVIORS OF DIABETIC PATIENTS IN DIABETES MELLITUS CLINIC, CHANGHAN HOSPITAL, ROI ET PROVINCE, THAILAND

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ABSTRACT: The objective of this study was to find out the factors influencing self-care behaviors of diabetic patients treated at the Diabetes Mellitus Clinic, Changhan Hospital, Roi Et Province. It was a cross-sectional study with simple random sampling among 315 samples. Data collection was in December 2009. Descriptive statistics was employed (frequency, percentage, means, standard deviation) and Chi Square Test was used to find out the relationship among social-demographic characteristics, knowledge and attitude about diabetes mellitus, and self-care behaviors of diabetic patients. The result found that majority of the samples were females (72.1%), aged more than 60 years old (39.7%), married (73.3%), finished primary school or lower (88.3%), were farmers (77.1%) with household monthly income and expenses of less than 2,000 baht (56.5% and 44.8% respectively). The duration of their diabetes illness was less than 5 years (53.3%). Sixty-two point five percent of the samples had no family members with diabetes mellitus history, and 66.7% had people around to motivate them to control diabetes. Ninety one point one percent of the samples received diabetes mellitus related information from public health officers. The samples had good level of knowledge about diabetes mellitus, had generally good attitudes toward the illness, as well as very good level of self-care behaviors. The current study found statistically significant relationship at the level of <0.05 between the level of self- care behaviors and knowledge, age, current occupation, household monthly expense, years of suffering from diabetes mellitus, and having family members suffering from the illness. The study result provided fruitful recommendations for future planning on the prevention of diabetes mellitus.

Keywords: Self-care behavior, diabetic patients, Changhan Hospital, Roi Et Province, Thailand

INTRODUCTION: Diabetes mellitus (DM), a non-communicable disease, is one of the global public health problems and concerns. Diabetic patients not only suffer from DM symptoms, but also from acute and chronic complications, for example, cardiovascular-ophthalmic-neurological complications, and hypertension. These complications can cause disabilities among diabetic patients. The World Health Organization has projected that in 2030 the global prevalence of DM in all age ranges will become 4.4% or a total of 366 million diabetic patients[1]. DM is usually found in urban residents and DM type 2 is the most frequently occurring form of diabetes that shows no obvious symptoms. People with DM type 2 usually do not know that they have suffered from the illness until they get the blood test to measure their blood glucose level. Most diabetic patients receive diabetic medication or insulin treatment. Risks for getting DM symptoms and its complications vary depending on individual self-care behaviors[2].

The prevalence of DM in Thailand has been increased from 33.3 to 147.2 per 100,000 population during 1985 to 1997[3]. This means that every 2,000 people, three of them are diabetic patients. The most common form of DM (95.0%-96.3%) in Thailand is Type 2 DM[4] and Thai women were majority of DM patients. The risks of the illness heighten with increasing ages, consequently, people over 40 years old are at high- risk of getting DM[5]. Prevalence of DM in Thai people aged 30-64 is 5.0-7.0% and that in over 60 years old Thai is 10.0-15.0%[6]. For the complications derived from DM, according to the data from Thailand

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Diabetes Registry Project, the overall prevalence of hypertension, chronic renal insufficiency, cataract, diabetic retinopathy, ischemic heart disease, and ischemic cerebrovascular disease is 63.3%, 43.9%, 42.8%, 30.7%, 8.1%, and 4.4%, respectively[7]. Registered data at Changhan Hospital revealed a high number of diabetic patients screened by the Chronic Care Clinic for hospital treatment. From the 3-year progress report of the Hospital, it found that 95.0% of diabetic patients were non-insulin- dependent and the prevalence rate of DM in 2006, 2007, and 2008 were 1,929, 1,979 and 2,134 per 100,000 population respectively[8]. This indicated an increasing trend of DM in Changhan District, Roi Et.

Fortunately, DM is a preventable disease. To protect acute complications, to reduce risks of getting chronic complications, and to avoid unnecessary disabilities, which can cause a great burden to diabetic patients themselves, their family, and society, the American Diabetes Association has issued the guidelines to improve diabetic patient's care. The guidelines highly recommended that diabetic patients be treated through the change of their lifestyle. This includes the patient's diet habits and self-care management along with taking diabetes medication to reduce their blood glucose level[9), 10)].

In order to better the situations of DM in Changhan Hospital, the objectives of this study were (1) to explain the social-demographic characteristics, knowledge, and attitude of diabetic patients receiving treatment at Diabetes Mellitus Clinic in Changhan Hospital, Roi Et (the samples) (2) to study the level of self-care behaviors of the samples and (3) to analyze factors influencing self-care behaviors of the samples. It was expected that meaningful recommendations could be derived based on the study result.

MATERIALS AND METHODS: This research design was a cross-sectional study. The researcher applied the body of knowledge compiled from past literature review on diabetes mellitus to guide the current research. The aim was to find out the factors influencing self-care behaviors of diabetic patients at Diabetes Mellitus Clinic in Changhan Hospital, Roi Et province. Data collection was in December 2009. The research population was 1,009 diabetic patients registered in 2008 through clinical diagnosis. They were all alive and regularly received health care services at the Clinic. Simple random sampling was conducted by sorting out registered identification number of the patients, followed with sampling the identification number from the sampling table until a number of 315 samples were achieved. Data was collected through the use of self-administered questionnaire. In case of illiterate patients, face-to-face interview was done by responsible officers at the Hospital. Data was analyzed by SPSS Version 17. The statistics used were frequency and percentage on social-demographic characteristics and knowledge of DM, while mean and standard deviation were used for attitude and self-care behaviors of the samples. Chi Square test was used to find the relationship between independent variables and self-care behavior of the samples.

RESULTS: The majority of the samples were females (72.1%), aged more than 60 years old (39.7%), married (73.3%), finished primary school or lower (88.3%), were farmers (77.1%) with household monthly income and expenses of less than 2,000 baht (56.5% and 44.8% respectively). The duration of their diabetes illness was less than 5 years (53.3%). Sixty-two point five percent of the samples had no family members with diabetes mellitus history, and 66.7% had people around to motivate them to control diabetes. Ninety one point one percent of the samples received diabetes mellitus related information from public health officers. All of the samples (100.0%) possessed high level of knowledge for dietary control to keep blood glucose level as close to its normal level. Almost all (98.7%) knew about appropriate types of exercises for diabetic patients, 97.5% reported that they should not exercise when being hungry or full, and 97.1% perceived that thinking positively can help fresh-up their mind and partly reducing blood glucose level. The data revealed that 43.5% had low level of knowledge on diabetes mellitus's symptoms.

On the other hand, the sample had a good attitude level on, for instance, "having health check-up and medication as scheduled"; "behaving according doctor's suggestion can reduce incidence of complications"; "diabetic patients should control weight to be not over normal level"; "exercising regularly is beneficial to diabetic patients"; and "small wounds should be treated immediately". The sample performed the following self-care behaviors very well, for instance, "following physicians/health officials' suggestions when getting ill"; "not reducing quantity of medication by self"; "focusing on oral health"; "measuring blood test and blood pressure as scheduled" and "showering by focusing on cleaning body's covered areas". On the other hand, the sample did not perform self-care behaviors well included such items as "not eating three scheduled meals a day"; "not exercising for at least 30 minutes each time", and "eating food according to your needs without limiting quantity". Tables below indicate the relationship among independent and dependent variables.

Table 1 Relationship between the sample demographic characteristics and their self-care behaviors

Demographic characteristics	Level of self-care behaviors			χ^2	*p-value*
	Fair to good	**Very good**	**total**		
Gender					
- Male	36(40.9%)	52(59.1%)	88(100%)	3.741	0.053
- Female	67(29.5%)	160(70.5%)	227(100%)		
Age (years)					
- Less than 51	45(61.6%)	28(38.4%)	73(100%)	37.355	0.001*
- 51 – 60	32(27.4%)	85(72.6%)	117(100%)		
- More than 60	26(20.8%)	99(79.2%)	125(100%)		
Marital Status					
- Single	21(25.0%)	63(75.0%)	84(100%)	3.085	0.079
- Couple	82(35.5%)	149(64.5%)	231(100%)		
Education Level					
- Primary school or lower	94(33.8%)	184(66.2%)	278(100%)	1.336	0.248
- Secondary school or higher	9(24.3%)	28(75.7%)	37(100%)		
Current Occupation					
- Unemployed	2(7.1%)	26(92.9%)	28(100%)	9.562	0.008*
- Farmer	88(36.2%)	155(63.8%)	243(100%)		
- Others (Employee, trader, government officer, and monk)	15(34.1%)	29(65.9%)	44(100%)		
Household monthly income (baht)					
- Less than 2,000	63(35.4%)	115(64.6%)	178(100%)	1.513	0.469
- 2,000 – 3,999	17(27.4%)	45(72.6%)	62(100%)		
- 4,000 or over	23(30.7%)	52(69.3%)	75(100%)		
Household monthly expense (baht)					
- Less than 2,000	60(42.6%)	81(57.4%)	141(100%)	15.035	0.001*
- 2,000 – 3,999	28(31.5%)	61(68.5%)	89(100%)		
- 4,000 or over	15(17.6%)	70(82.4%)	85(100%)		

Table 1 (cont.) Relationship between the sample demographic characteristics and their self-care behaviors

Demographic characteristics	Level of self-care behaviors			χ^2	*p-value*
	Fair to good	Very good	total		
Years of suffering from diabetes mellitus					
- Less than 5 years	73(48.5%)	95(51.5%)	168(100%)	20.476	0.001*
- 5 – 9 years	17(62.0%)	49(38.0%)	66(100%)		
- More than 9 years	13(35.5%)	68(64.5%)	81(100%)		
Ever had anyone in your family suffering from diabetes mellitus					
- Ever	48(40.7%)	70(59.3%)	118(100%)	5.459	0.019*
- Never	55(27.9%)	142(72.1%)	197(100%)		
Having people around to encourage in controlling diabetes					
- Yes	71(33.8%)	139(66.2%)	210(100%)	0.353	0.552
- No	32(30.5%)	73(69.5%)	105(100%)		
Receiving diabetes mellitus related information from public health officers					
- Yes	93(32.4%)	194(67.6%)	287(100%)	0.127	0.722
- No	10(35.7%)	18(64.3%)	28(100%)		

* *p-value* < 0.05

Table 1 found the statistically significant relationship (p-value < 0.05) between the level of self-care behaviors and age, current occupation, household monthly expense, years of suffering from diabetes mellitus, and having family members suffering from the illness.

Table 2 Relationship between knowledge, attitude, and self-care behaviors of the samples

Variables	Level of self-care behaviors			χ^2	*p-value*
	Fair to good	Very good	total		
Knowledge level					
- Medium	31(79.5%)	8(20.5%)	39(100%)	42.667	0.001*
- High	74(26.8%)	202(73.2%)	276(100%)		
Attitude level					
- Fair	9(56.3%)	7(43.8%)	16(100%)	4.164	0.125
- Good	77(31.6%)	167(68.4%)	244(100%)		
- Very good	19(34.5%)	36(65.5%)	55(100%)		

* *p-value* < 0.05

Table 2 found the statistically significant relationship (p-value < 0.05) between the level of self- care behaviors and knowledge about diabetes mellitus, but found no statistically significant relationship (p-value < 0.05) with the attitude on the illness.

DISCUSSION: Based on the study result, female had high prevalence of diabetes mellitus. This is in line with the World Health Organization's statement that most of diabetic patients are women[5]. Table 1 indicates that out of total social-demographic characteristics, there were 5 variables having statistically significant relationship with self-care behaviors of the sample (p-value < 0.05). They were age, current occupation, household monthly expense, years of suffering from diabetes mellitus, and no family members with diabetes mellitus history.

Majority of the samples were farmers in very low household monthly income and expenses brackets, therefore, they might have to be attentive to their health status to save household health care costs. As they were in their early old age (39.7%), therefore, having their relatives accompanying them when visiting hospital would be helpful in order to help in their remembrance and in encouraging them to control their DM efficiently. Fifty three point three percent of the samples had their DM less than 5 years and 62.5% percent of them had no family members with DM history might indicate that health promotion information provided by Changhan Hospital may be effective in conveying the message that DM is not an issue of genetic-related but more of an issue toward the change of one's lifestyle. As 66.7% of the samples had people around them to motivate them to control diabetes, it does show a good trend of peer-assistance approach in preventing chronic illness among the Thais. The fact that 91.1% of the samples got information regarding DM from public health officers, Changhan Hospital should therefore continue its activity through health-related information dissemination to the patients. Reflecting in the knowledge part that the samples had high level of right knowledge about DM might be counted as one more success of Changhan Hospital's dissemination of information on health prevention and health promotion to the patients. Though there was a statistically significant relationship (p-value < 0.05) between knowledge and self-care behaviors, nevertheless, there were still some gaps of knowledge which should be improved so that the samples could gain correct body of knowledge for their self-care, particularly only medium level of knowledge on negative statements. Same applied for attitude of the samples which should be aimed at bettering the perception of health promotion. All of the findings on social-demographic characteristics, knowledge, and attitude in relation to self-care behaviors of the samples in the current study correspond to the study by Promchak (2007)[11] and Chompusri et al. (2008)[12], particularly for knowledge and its relation to self-care behaviors of the samples. Finally, it is recommended that, in the future, there should be a firm establishment of "healthy" concept by starting from the very young age as well as a strong commitment of cooperation among villagers for diabetes mellitus control through a promotion of knowledge and attitude in a correct manner to ascertain the achievement of "healthy life" among Thais as health is one of the basic human rights.

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