ปัจจัยที่เกี่ยวข้องกับพฤติกรรมการดูแลตนเองของผู้ป่วยเบาหวานในเมืองเหว จังหวัดทูเทียนเหว ประเทศเวียดนาม

Factors Related to Diabetes Self Care Behaviors of Diabetes Patients in Hue City, Thua Thien Hue Province, Vietnam

บทความวิจัย
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บทคัดย่อ

การวิจัยเชิงพรรณนานี้มีวัตถุประสงค์เพื่อ 1) ศึกษาระดับของพฤติกรรมการดูแลตนเองของผู้ป่วยเบาหวาน และ 2) ศึกษาความสัมพันธ์ระหว่างปัจจัยที่เกี่ยวข้องและพฤติกรรมการดูแลตนเอง ผู้ป่วยเบาหวานที่อาศัยในเมืองเหว จังหวัดทูเทียนเหว ประเทศเวียดนาม และได้รับการวินิจฉัยโดยแพทย์อย่างน้อย 6 เดือน จำนวน 200 คน เข้าร่วมการวิจัยในครั้งนี้ ด้วยวิธีการสุ่มตัวอย่างอย่างง่าย ข้อมูลวิเคราะห์ด้วยสถิติเชิงพรรณนาและการวิเคราะห์หาค่าสัมประสิทธิ์สหสัมพันธ์ ผลการวิจัย พบว่า ผู้ป่วยเบาหวานมีพฤติกรรมการดูแลตนเองอยู่ในระดับปานกลาง ($\overline{X}$ =3.98; SD=1.19) ปัจจัยที่มีความสัมพันธ์กับพฤติกรรมการดูแลตนเองอย่าง มีนัยสำคัญทางสถิติ (p<.05) ได้แก่ ระดับการศึกษา (r=.24, p<.01) รายได้ (r=.31, p<.001) สวัสดิการด้านประกันสุขภาพ (r=.21, p<.05) ความรู้เรื่องโรคเบาหวาน (r=.35, p<.001) การรับรู้ความสามารถของตนเอง (r=.17, p<.05) ความเชื่อในประสิทธิผลของการรักษา (r=.42, p<.001) การดูแลสนับสนุนของครอบครัว (r=.39, p<.001) การบริการสุขภาพในชุมชน (r=.26, p<.001) และการสื่อสารระหว่างผู้ป่วยและผู้ให้บริการทางสุขภาพ (r=.04, p<.001)

คำสำคัญ: พฤติกรรมการดูแลตนเอง เบาหวานประเภทที่ 2 ผู้ป่วยเวียดนาม

Abstract:

The aim of this descriptive correlation study was to identify level of diabetes self care behaviors and to explore relationship between self care behaviors and related factors in Hue city, Thua Thien Hue Province, Vietnam. Two hundred people with diabetes diagnosed for 6 months and longer were recruited via simple random sampling. Descriptive and correlational statistic were used to analyze data. Results showed that diabetes self care behaviors was found at moderate level ($\overline{X}$ =3.98; SD=1.19). The statically significant correlation were found between the self care behaviors and education (r=.24, p<.01), income (r=.31, p<.001), insurance (r=.21, p<.05), diabetes knowledge (r=.35, p<.001), diabetes self efficacy (r=.17, p<.05), belief of treatment effectiveness (r=.42, p<.001), family support (r=.39, p<.001), community health care service (r=.26, p<.001) and health care provider–patient communication (r=.40, p<.001).

keywords: self care behaviors, type 2 diabetes, Vietnamese patients

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Background

The prevalence of diabetes has a growing trend in the world as well as in Vietnam. It also causes the mortality and morbidity. [1] By the year 2025, the Western Pacific is the region with the highest number of diabetics with 44 million people and the region of Southeast Asia has 35 million.[2] In addition, according to WHO, it was about 347 million people worldwide with diabetes in 2010 and was predicted that diabetes will become the 7th leading cause of death around the world by the year 2030.[3] Currently, an estimation of 4.5 million Vietnamese people with diabetes; however, the worryingly up to 65% of patients did not know they were sick.[4] In Vietnam, the prevalence of 2.6% was adjusted for Type 2 diabetes population aged over 20 for the whole country [5] and it was expected that will increase to 3.5% by 2025.[6] The prevalence of diabetes and impaired fasting glucose of people over 15 years in Hue city was 6.57% and 7.58% respectively.[7] Compare to the data which was estimated for country as a whole, the prevalence of diabetes in Hue city, Thua Thien Hue Province is significantly higher.

Management of diabetes and its complications is complicated, life-long and expensive. However, research evidence shows that the effective strategy to control diabetes and avoid its complications is daily performing diabetes self-care behaviors.[8] However, in Vietnam, not many diabetic patients performed diabetes self care behaviors on daily basis.[9] Effective programs and strategies to improve self care behaviors of diabetes patients are needed in order to improve health outcomes for Vietnamese diabetes patients in local area. In order to design an effective and appropriate program, it is very necessary to understand the level of diabetes self care behaviors and also its relationship with selected factors. There are many researches which have been studied relationship between diabetes self care behaviors and factors such as knowledge, self efficacy, social support, etc.[10-12] However, each factor was studied individual in most of studies and the results have found were conflicted sometime, furthermore, many of factors not yet studied in Vietnam and also in local area. In this study, many factors were recruited to study based on the situation of local area which found out from results of a pilot study of this issue and also based on literature reviews; selected factors were grouped into levels (individual, family and community) and in appropriate categories (individual and environment factors). Factors were selected to study include demographics, diabetes knowledge, belief in treatment effectiveness, self efficacy for individual level; family support for family level, community health care service and health care provider-patient communication for community level.

This study aimed to identify level of diabetes self care behaviors and to explore relationship between it and related factors in local area.

Method

A descriptive correlation design was used to explore the level of diabetes self care behaviors and the relationship between related factors and diabetes self care behaviors. Sample was recruited via simple random sampling technique. Two hundred Vietnamese diabetes patients who live in Hue city, Thua Thien Hue Province participated in this study with the inclusion criteria of 1) patient has been diagnosed with type 2 diabetes for 6 months or longer, 2) aged 18 or older and 3) full awareness and willing to participate in the study.

Data collection

After receiving approval from Ethical Committee for Human Research of Khon Kaen University and permission of the two biggest hospitals in Thua Thien Hue Province, eligible patients were identified and informed about the study. Information sheet and consent forms were provided to patients. Data was collected via a self reported questionnaire during July, 2013.

Instruments

The instrument used in this study was mainly adapted from the Chinese Diabetes Self Management questionnaire developed by Xu et al.[13] which included diabetes knowledge, diabetes self efficacy, belief in treatment effectiveness, family support, community health service, health care provider-patient communication and demographic characteristic.

These modified questionnaires were tested for validity using Content Validity Index (CVI) set at .80 and higher for each item and coefficient of internal consistency, Cronbach's alpha, was used as an estimate of the reliability ranged from .70 to .79. The questionnaires also translated to Vietnamese language following the process of instrument translation by WHO.

Data Analysis

Data were analyzed with the Statistical Package for Social Science (SPSS) program version 16 for Windows. Level of significance was set at 5%. Descriptive statistics such as frequency, mean, standard deviation were used. The relationships between the variables were examined with Pearson's Product-Moment Correlation test for the factors of diabetes knowledge, diabetes self efficacy, belief of treatment effectiveness, family support, community health care service, health care provider-patient communication and Spearman Rank-Order Correlation test for the demographic factors i.e., age, gender, marital status, education, employment, income, insurance, living status and duration of diabetes.

Results

Demographic characteristics

The age of patients were ranged from 31 to 90 ($\overline{X}$=60.2, SD=12.4) but the highest number was in between 51 to 60 years old (29.5%). The percentage of females was higher than males (56.5% vs 43.5%) and 85.5% was married. Twenty-four percent of patients were graduated from high school and 17% had graduated from college or university. Approximately 30% of patients worked full-time while about 44% was retired; 42% had the monthly income in between 3 to 5 million VND and 65.5% lived with their spouse and/or children. Moreover, more than half of patients had the duration of treatment more than one year (76%), use insulin for their treatment (67.5%); and had health insurance but also co-pay by the patients (68.5%).

Factors related to diabetes self care behaviors and level of self care behaviors

The overall of diabetes self care behaviors were found at moderate level ($\overline{X}$=3.98; SD=1.19). It can be understood that in average, diabetes patients performed their diabetes self care behaviors for almost 4 days a week which were not enough to meet the requirements for controlling the blood glucose and preventing the diabetes complications.

Most of dimensions of the self care behaviors including medication, diet, exercise, foot care also were found at moderate level with the overall mean score of 3.98 (SD=1.19), ranged from 3.94 to 5.41, except the dimension of self monitoring was at low level with mean of 2.46 (SD=1.91). (See table 1)

Moreover, in overall, most of the factors had found at the moderate level including diabetes self efficacy ($\overline{X}$=3.67, SD=0.73), belief of treatment effectiveness ($\overline{X}$=3.64, SD=0.71), family support ($\overline{X}$=3.34, SD=0.72), health care provider–patient communication ($\overline{X}$=3.47, SD=0.7). However, the factors of community health care service ($\overline{X}$=2.45, SD=0.75) was found in the category of low level. (See table 2)

Table 1 Mean, Standard deviation, the interpreting and the overall diabetes self care behaviors of adult diabetes patients (*N*=200)

Diabetes self care behaviors	Mean	SD	Interpreting level
Medication	4.56	2.75	Moderate
Diet	5.41	2.17	Moderate
Exercise	4.54	2.63	Moderate
Self monitoring	2.47	2.14	Low
Foot care	3.94	2.10	Moderate
The overall	3.98	2.57	Moderate

Table 2 Overall mean, Standard deviation, the interpreting of factors related to diabetes self care behaviors

Factors	Overall mean	SD	Interpreting level
Knowledge	6.8	2.1	Moderate
Self efficacy	3.67	.73	Moderate
Belief in treatment effectiveness	3.64	.71	Moderate
Family support	3.34	.72	Moderate
Community health service	2.45	.75	Low
Health care provider–patient communication	3.47	.70	Moderate

The relationship between factors and diabetes self care behaviors

The positive correlation was existed between diabetes self care behaviors and education (r=.24, p<.01), income (r=.31, p<.01), insurance (r=.21, p<.05).

The statistically significant correlation also found between the self care behaviors and diabetes knowledge (r=.35, p<.001), diabetes self efficacy (r=.17, p<.05), belief of treatment effectiveness (r=.42, p<.001), family support (r=.39, p<.001), community health care service (r=.26, p<.001) and health care provider –patient communication (r=.40, p<.001). (See table 3)

Table 3 Relationship between related factors and diabetes self care behaviors (N=200)

Variables	Diabetes self care behaviors	
	Pearson correlation	Spearman correlation
Education	x	.24**
Income	x	.31***
Insurance	x	.21**
Knowledge of diabetes and self care	.35***	x
Beliefs of the effectiveness of the treatment	.42***	x
Self-efficacy	.17*	x
Family support	.39***	x
Community health services	.26***	x
Healthcare provider-patient communication.	.40***	x

Note: **:p<.05; **:p<.01; ***: p<.001*

Discussion

From the results, it has been concluded that the self care behaviors performance of people with diabetes in local area were not met the requirement and it can also be affected by some factors. The discussion of diabetes self care behaviors and the relationship between it and selected factors in Hue City, Thua Thien Hue Province, Vietnam was as follow:

Diet behavior was found at the moderate level which meant most of the patients had acceptable diet behavior and this also the best behavior was found compared with others behaviors. However, Dao et al.[14] and Bui[15] said that the practicing the behavior of diet in diabetes patients were sub-optimal. Diet behavior can be affected by many factors such as country eating culture as rice is the main food as well as lacking of knowledge about diet.[15] Vietnamese eat rice in every main meal as they think rice is the main source of energy, thus, it is not easy to change their habit of eating as well as their thinking about rice. Moreover, affected by Western culture as eating more fast food can also be another factor. Besides the novelty, to save time, many people choose fast food as a solution.

Exercise behavior was found at moderate level which meant a majority of patients had been exercised at least 30 minute per day for almost 5 days a week. This finding was also corresponded with the study of Svartholm and Nylander[16] but contrasted with the studies of Dao et al.[14] and Bui[15]. Even this finding was acceptable compared with the standard but because patients mainly chose the lower level exercise such as gentle walking or swimming then this behavior can still be affected by some reason such as no free time or bad weather.

Medication behavior was found at moderate level. It meant that diabetes patients had not followed the prescription of medication for treating diabetes. The low level of self monitoring and insufficient income was reported in this study. It might lead to a worrisome that incorrect insulin dosage can be happened in diabetes patients in this area.

Self monitoring behavior was found at low level which meant that most of patients were not often checked their blood glucose level. Self monitoring behavior was not met the recommendation as should check their blood glucose at least 4 times per day to help to prevent hypoglycaemia.[17] However, according to the International Diabetes Institute[18], monitoring of blood glucose depends on the available resources in the country and on the available resources for the individual. Based on the situation of low level income of patients and the limit of resource of each health care center and hospital in area, the result of low level of self monitoring behavior is reasonable.

Foot care behavior was found of at moderate level. Patients in this study just washed, dried and checked their feet some days in a week but not daily. This result was concordant with the study of Svartholm and Nylander[16] which stated that diabetes patients took good care for foot but not optimal; the study of Pham and Nguyen[19] showed that 67.6% of patients took care their foot not in the right way. Thus, the recommendation and practiced instruction of foot care should be provided more often to the patients in Vietnam.

The relationship between factors and self care behaviors in diabetes patients

This study found the significantly positive correlation between diabetes self care behaviors and knowledge (r=.35, p<.001). This is consistency with the finding of previous studies which found that more knowledgeable patients have shown to be more likely to implement positive lifestyle and self-care behaviors.[20-22] It also agreed with study of Bui[15] which study in Ho Chi Minh city, Vietnam. However, there were many previous studies had the difference results which knowledge alone insufficient for behaviors change.[23-29] The positive correlation between self efficacy and diabetes self care behaviors which found in this study (r=.24, p<.01) was supported by theory of Bandura[30] and previous study reported by Hurley and Shea[12]. Aljasemet al.[31] also found the similar result concluded that better self-efficacy predicted more often in blood glucose testing, less frequent skipping of medication, less often of bad eating behavior, and more adherence to diet.[31]

In addition, belief in treatment effectiveness was significantly correlation with diabetes self care behaviors (r=0.46, p<.001). The result found was consistent with many previous studies [32-34] which showed that belief of treatment effectiveness was a significant predictor of diabetes self-management.

Similar result of positive correlation also was found in the relationship between family support and diabetes self care behaviors (r=.41, p<.001). This is consistent with the finding of many previous studies.[35-39] All studies confirmed that patients who received the support from family and friends had the better practicing diabetes self care behaviors and opposite with that, who did not received the support had the poorer self care behaviors.

The factor of community health services had been found that existing of a significant positive correlation with diabetes self care behaviors (r=1.0, p<.001). There was some intervention studies reported that the better in community health services, the better in diabetes control.[40-41] Similarly, Spencer et al.[42] found that the group of patients who received the services of diabetes self management education and regular home visit by community health care worker had the significant higher level diabetes understanding and value of HbA1c decreased from 8.6% to 7.8% after 6 months compared with no change in control group.

Based on the findings, to improve diabetes self care behaviors, all the related factors which are knowledge, diabetes self efficacy, belief of treatment effectiveness, family support, community health care service and patient-health care provider communications should be considered.

Suggestions

1) This research was studied in a city as an urban area thus to validate the findings, the replication of this study is recommended to conduct this study on a rural area, other cities or in the hospitals with diabetes patients.

2) The questionnaire still need to be improved in the further studies as add up more items to make it more detail; can combine with another method such as observation or using patients' daily dairy to collect and clarify the information related to diabetes self care behaviors in detail.

3) Based on the finding of this study, the experimental studies which conduct to see the effect between each factor and diabetes self care behaviors and health outcome in people with diabetes was recommended.

Implications for nursing

The proposed plan to increase the self care behaviors of diabetes patients.

Based on the results, a proposed plan to increase the self care behaviors performance of people with diabetes in this area has been designed. The objectives of the plan include:

1) Increasing the knowledge of patients about diabetes and self care behaviors.

2) Improving the performance of self care behaviors (diet, exercise, self monitoring, medication and foot care) of people with diabetes as much as the requirement.

3) Increasing self efficacy and belief in treatment effectiveness of people with diabetes.

4) Increasing the participation of family, community in term of supports for diabetes patients

5) Improving the communication between health care providers and diabetes patients.

In order to achieve the objectives above, the activities for each level of community, family, individual has been designed as follow

At health care center level, conduct a group of diabetes educators who are knowledgeable, experience and skill in diabetes and self care behaviors to help patients, families and health volunteers improve their knowledge as well as conduct workshop of communication between health care provider and diabetes patients to increase their communication are necessary.

At community level, conduct a group of health volunteers will be very helpful especially to support diabetes patients and their families to improve their self care behaviors. In addition, conduct diabetes clubs as an environment for diabetes patients and family members to learn and share issues related to diabetes is very important; other positive conditions for diabetes patients perform their self care behaviors such as exercise place or restaurant for diabetes patients, convenient transportation to go to health care center, etc also should be conducted.

At family level, activities related to diabetes education should be conducted the for families living with diabetes patients to increase knowledge of families' members of how to take care diabetes patients. Furthermore, each family can conduct their own activities as family's supports such as talking, sharing and encouraging with family members with diabetes.

At individual level, a camp of self care behavioral change to increase knowledge and skills of diabetes self care behaviors of diabetes patients should be conducted.

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