The Effectiveness of Psychological Development of Self-Care Activities in Diabetic Patients: Case Studies of District Hospitals in Thailand

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Abstracts

Background: Raising awareness and motivating patients to participate in activities is critical to promoting successful activities in self-care for people with diabetes, taking care of all aspects that make people with diabetes have a good quality of life. Reduce mortality and complications.

Objective: This research aims to measure the level of knowledge in self-care of people with diabetes and study the effectiveness of developing activities in the self-care of diabetic patients.

Methods: This research is Quasi-experimental. Carry out self-improvement activities with diabetics who cannot control their sugar levels 33 people. Use descriptive statistics to analyze data and pair t-test statistics to test samples before and after activity.

Results: The sample had a high level of knowledge in the self-care of diabetics. The self-care knowledge score value after participating in the sample activity is higher. The model for this activity is suitable for patients' t-test = 8.856 (p-value<0.05). Development activities in self-care of diabetic patients and health promotion hospitals in this trial with people with diabetes were practical, and the content matched the needs of the patients.

Conclusion: Creating self-improvement activities in patient care organizations or persons needs to focus. Raising patient awareness and a shared sense of problem-solving, bringing appropriate educational materials is essential to encourage patients to feel shared and want to take care of their health.

Keywords: Self-Care, Activities program, Health promotion, Diabetic disease

Introduction:

Diabetes is a noncommunicable disease found in populations in all countries around the world. There are many causes of diabetes. Diabetes can be hereditary if there is a direct family history of diabetes, including the livelihood of a well-ing, over-eating person, lack of exercise, obesity, stress, medications, and some minerals. The International Diabetes Federation reported that in 2017 there were 425 million people with diabetes worldwide, and it is estimated that by 2045 the number of people with diabetes worldwide will increase to 629 million. (Diabetes Association of Thailand in the Royal Patronage of Her Royal Highness Princess Maha Chakri Sirindhorn, 2017).

The purpose of the diabetes care system is not only for blood tests and medications. However, the real essence is the opportunity for providers, Patients, and families to assess the illness—joint health problems and learn to manage diseases and other related problems. (Lakshmi, R., Ganesan, P., Mohan Anjana, R., Balasubramanyam, M. and Mohan, V, 2014). Therefore, raising healthcare awareness is essential (Zolbin, M. G., Huvila, I., & Nikou, S., 2022). An analysis of service problems showed that people with diabetes had incorrect healthcare habits. It affects the control of blood sugar levels, including improper intake the body

(Toha, S., et al., 2020). Incorrect intake of medicine and insulin injections (Arda Sürücü, H., Okur Arslan, H., & Çetik, S, 2021). Intermittent treatment and the education of healthcare workers are still the same patterns (Muzvondiwa, B., & Batterham, R. (2022). Blood glucose control is not on target. This causes higher acute complications. Therefore, to prevent the occurrence of complications of diabetics. The patient must be involved in self-care so as not to cause eye complications, kidney, coronary artery, and stroke (WHO, 2016). This includes changes in eating habits. They are taking medications, exercising, not smoking, no alcohol, ongoing treatment, and stress management. In particular, proper emotional management affects the self-care of people with diabetes. (Khajebishak, Y., Faghfouri, A. H., Molaei, A., Rahmani, V., Amiri, S., Asghari Jafarabadi, M., & Payahoo, L., 2021)

The purpose of this research was to measure the level of knowledge in self-care of diabetics and to study the effectiveness of developing activities in the self-care of diabetic patients. To promote proper self-care for people with diabetes. Allow people with diabetes to control their blood glucose levels. Reduce complications or prevent complications effectively. According to the literature review, activities that people with diabetes should pay attention to and have the proper knowledge of includes food consumption, maintaining emotional balance, exercise, smoking, medications, and blood glucose treatments to improve the health of people with diabetes and continue to live everyday life and have a good quality of life.

Materials and Methods

Research Design and Sampling

This research is a Quasi-Experimental Design—study on people with diabetes in Ban Prok Health Promoting Hospital Muang District, Samut Songkhram Province. Data were collected from February - April 2023. Select a specific sample based on a given property. (1) A person, a doctor, diagnosed as having diabetes. (2) Good feeling, normal hearing, able to communicate. (3) Regardless of gender, occupation, marital status, or economic status (4) Willing to participate in research and (5) Have glucose levels in the range of 126-150 mg/dL. Obtain some samples with such properties, 33 people.

Research Instrument

1. Data collection tools include:

1.1 Questionnaires developed a questionnaire based on a review. Create your query. It is divided into two parts as follows:

Part 1 is a personal information questionnaire—five items including gender, age, blood sugar level, weight, and hereditary disease.

Part 2 measures the level of knowledge of people with diabetes, namely food intake, maintaining emotional balance, exercise, smoking, treatment of medications, and treatment of blood glucose levels total of 20 items with a 5-point scale, 1 = never, 2 = once in a while, 3 = some time, 4 = frequent and 5 = most frequent. A score of 20-40 means a trim level of self-care, Scores between 41-60 points with moderate self-care knowledge, A score between 61-80 means a considerable level of self-care, and a score of 81 or more means the highest level of self-care. This machine tests the accuracy of expert content at just 0.83 and cronbach's coefficient alpha of 0.80.

1.2 Tools used in the test is comprehensive in recognizing and accepting one's health condition. Activities to take care of yourself include the consumption of food, maintaining emotional balance, exercise, smoking, and use of medications to treat blood sugar levels consists of 3 series of tools;

1.2.1 Series 1 Self-care competency development model. In addition to the investigators, health care professionals at health promotion hospitals in Ban Prok Subdistrict, Muang District, Samut Songkhram Province, participated as research assistants in organizing activities. The plan of activities includes patient preparation, Reviewing and analyzing the problem, assessment and decision-making, setting realistic goals, providing knowledge, practicing self-management, and monitoring and evaluation.

1.2.2 Series 2 Slide presentations accompanying lectures on self-care and patients on six topics: food consumption, maintaining emotional balance, exercise, smoking, therapeutic drugs, maintaining blood glucose levels, and taking self-care knowledge tests using pre- and post-activity tests.

1.2.3 Series 3 Diabetic self-care guide at home with diabetes content, causes, symptoms, interpretation of blood draw results, hypoglycemia, unconsciousness from hyperglycemia, complications, proper food intake, maintaining emotional balance, exercise, blame smoking, effective treatment of diabetes to provide examples to review self-care at home.

The instruments used in this experiment tested the accuracy of the content with a reliability value of 0.83 and cronbach's coefficient alpha of 0.80.

Data Collection

Before the data collection process, the researcher sought permission from the director of Ban Prok Subdistrict Health Promotion Hospital, Muang District, Samut Songkhram Province. Moreover, the researchers have conducted a request for ethics in human research from Suan Sunandha Rajabhat University. We then explained the study objectives and procedures to the participants and how we would protect their rights in connection to the study. After obtaining the participants' written consent to participate in the study, we explained how to accomplish the questionnaires and allowed them to ask questions afterward. We then asked the participants to accomplish the questionnaires. Finally, we examined the accomplished questionnaires for completeness and correctness before conducting a statistical analysis.

    1.1 The 1st session collected general data on February 24, 2023, to collect data on self-care behaviors and blood glucose values. Conduct relationship-building activities to make the sample feel shared and aware of their health care. Give out self-care guides to sample samples for use in self-care at home. Moreover, collect data from the sample before carrying out self-care activities. Then make an appointment for a sample to meet—a second time next two weeks.

    1.2 The 2nd session is on March 10, 2023. Visited a sample of self-care activities. That applies the operating procedures following Orem's theory and literature review. as follows

    2.2.1) Step 1: Build relationships and prepare patients with analytical activities. Problem situations and targeting actions according to their circumstances. Organizing group relations activities to dissolve behaviors and promote good relationships with each other facilitate better learning. In the activity, the experimental groups were matched to discuss blood glucose levels. Behavioral health problems result in an inability to control blood sugar levels, health problems, or subsequent complications. Furthermore, approaches to managing self-care issues.

    2.2.2 Step 2: Is the phase of evaluation and decision. In this phase, six educational activities were organized: food consumption, maintaining emotional balance, exercise, smoking, using therapeutic drugs, and maintaining blood glucose levels. At this stage, we create a collaborative learning environment among patients. There are media-supporting activities and activities.

    2.2.3 Step 3: is the phase of action and evaluation of the action at this stage, using a participatory learning process. To consider past self-care habits. Setting practical goals, ensuring self-care, and giving compliments on decisions are encouraging and motivate you to take care of yourself continuously when returning home.

    2.2.4 Step 4: Explain the diabetic self-care manual and give it back for review. Then schedule a meeting for another four weeks. In the meantime, if the sample has further inquiries, the researcher can be contacted directly to provide advice, resolve the issue quickly, and meet the patient's needs.

    2.3 The 3rd session is on April 7, 2023. After eight weeks of participating in the program, the researchers collected data on self-care behavior at Ban Prok Subdistrict Health Promotion Hospital and collected data after conducting self-care activities.

Ethical Considerations

    The Human Research Ethics Committee of Suan Sunandha Rajabhat University endorsed the current study. (COA.1-010/2023, dated February 23, 2023). The study was conducted following the Declaration of Helsinki. As mentioned earlier, before the study commencement, we explained the study objectives and procedures to the participants in detail and obtained their written consent to participate in the study. We made it clear to the participants that they had the right to decline participation and withdraw from the study without any

consequence. The information obtained from the participants was kept confidential, and the study results are presented herein only for academic purposes.

Statistical Analysis

The data are presented herein as the frequency, percentage, mean, standard deviation, maximum, and minimum. Furthermore, pair t-test statistics are used in pre- post-test tests to develop activities in self-care for people with diabetes. P-value < 0.05 was considered statistically significant.

Results

Characteristics of the Participants

The majority of the samples were female (66.70%), hereditary diseases the sample, most of them had diabetes (39.40%), the majority of respondents were non-smoking (72.70%), the average age was 63.58 years, The average weight of the sample was 63.39 kg, and blood glucose levels averaged 124.70 mg/dl, as shown in Table 1.

Table 1 Sociodemographic Status of the Participants

Demographic Characteristics	Frequency	Mean ± SD	Percent (%)
1. Sex			
Male	11		33.30
Female	22		66.70
2. Hereditary diseases			
Diabetes	13		39.40
Diabetes and dyslipidemia	11		33.30
Hypertension and dyslipidemia	9		27.30
3. Smoking			
smoke	9		27.30
Non-smoking	24		72.70
4. Age		63.58 ± 9.53	
5. Weight		63.39 ± 12.57	
6. Blood glucose levels		124.70 ± 40.55	

Most respondents had a high level of self-care knowledge (48.50%), as shown in Table 2.

Table 2 Self-care literacy levels of diabetic patients (n = 33)

Level	Frequency	Percent (%)
Knowledge is of little importance	0.00	0.00
Knowledge is moderate	15.00	45.50
Knowledge is at a considerable level	16.00	48.50
Knowledge is at its highest level	2.00	6.00

Most of the respondents had a level of knowledge before the activity. The minimum score is 14.00 points, and the highest is 22.00 points, representing an average of 19.03 points. Moreover, there is a level of knowledge after the activity. The lowest score is 20.00 points, and the highest is 25.00, representing an average of 23.57 points. Statistical calculations showed a t-test of 8.856 and a p-value of 0.000, indicating the development activity in self-care of people with diabetes. Health Promoting Hospital Ban Prok Subdistrict, Muang District, Samut Songkhram Province, in this experiment with diabetics, it was effective, as shown in Table 3.

Table 3. Minimum, maximum, mean, and standard deviation activities in self-care of people with diabetes (n = 33)

Activities	Minimum	Maximum	Mean ± SD	t	p-value
				8.856	0.000
Pre- activities	14.00	22.00	19.03 ± 2.22		
Post- activities	20.00	25.00	23.57 ± 1.25		

Notes: *p-value < 0.05

Discussion

Research on the effectiveness of developing activities in self-care for people with diabetes Health Promoting Hospital Ban Prok Subdistrict, Muang District, Samut Songkhram Province From the analysis and summary of the research results can be discussed as follows:

Grades before and after implementation develop activities in self-care for people with diabetes. After participating in self-care activities, it was found that diabetic patients had higher scores. The most critical demands for health knowledge concern the effects, signs, and causes of diabetes, the appropriate diet for diabetics, and the steps taken to prevent foot issues. The most significant sources of information included literature, the media, ophthalmologists, doctors, and family members. Finding health information, which combines scientific and psychological concepts, is one of the challenges encountered. While the number of years since the initial diagnosis is adversely connected with the usage of informal sources, the stage of diabetes is positively correlated with the information needed for diabetes treatment. Kostagiolas, P., Tsiligros, P., Theodorou, P., Tentolouris, N. and Niakas, D., 2021). Nor, N.M., Sidek, S., Saad, N., Jaafar, N.H. and Mohd Shukri, N.A. (2021) the research results showed that stumbling block, self-care belief, knowledge application, and self-empowerment are the four main themes regarding the adherence to lifestyle modifications. As well as Vachon, B., Huynh, A.-T., Breton, M., Quesnel, L., Camirand, M., Leblanc, J. and Tardif, S. (2017) found that seven themes emerged from the needs expressed: the guarantee of adequate follow-up by a family doctor, ongoing access to services tailored to changing needs, encouragement to adopt and maintain healthy behaviors, maintenance of diabetes knowledge, psychological support, financial constraints, and collaboration with secondary-level services. Patients' suggestions for enhancing services were organized into five themes: facilitating access to services, disseminating knowledge about services offered, centralizing diabetes information online, providing individualized services, and enhancing interprofessional collaboration. Reza, H.M., Hasan, T., Sultana, M. and Faruque, M.O. (2021) found that in order to lessen the long-term effects of diabetes, strategic treatment, and appropriate attention must be paid to the predictors of poor glycemic control given the significant prevalence of poor glycemic control among diabetic patients. Reagan, L.A., Walsh, S.J. and Shelton, D. (2016) said freedom and motivation to take care of yourself are important. Research reports have shown that some inmates with diabetes may lack the desire to improve diabetes management due to highly regulated conditions, restricted alternatives for personal choices and self-care, and easy access to medical treatment. Yao, Z., Zhang, B., Ni, Z. and Ma, F. (2022) Participating in group activities is one of the ways to find information on self-care through technology. Patients can seek and exchange information in online health communities (OHCs) in four different ways: by searching for information, by looking for situations, by sharing objective information, and by sharing experience knowledge. The findings suggest that threads with self-disclosure may draw more answers and active participation from users. Topics for information sharing: symptoms, medication, and self-management. Senteio, C.R. (2019) found that it is important to consider the appropriateness and feasibility of the sample. Good media will raise patient awareness of health care and cooperation in activities. Rungrutthawatchai, S. (2017) research studies on the self-care behavior of elderly diabetic patients has been found that the causes of diabetes are genetics and dietary habits concerning the health care of people with diabetes. The major factors affecting diabetic self-care habits are diet, exercise, and general health care. In line with Medical guidelines for diabetes (2017), has been found that the causes of diabetes patients have bad healthcare habits affects the control of blood sugar levels, including improper eating, incorrect intake, insulin injections, intermittent treatment, physical inactivity, and blood glucose control is not on target. this causes higher acute complications. In line with the research of Pongpumma, L., & Himananto, S. (2020). research on

diabetes and its complications, has been found that behavior modification is important. Development of activities in self-care of diabetics. Knowledge of proper diet and medication. The information helps patients make decisions and continue to plan for self-care. Diabetic patients who have the right knowledge and understanding of diabetes will be able to take care of themselves. Mankun, K. et al. (2019) study comparing health-promoting behaviors of patients with type 2 diabetes between groups that control blood sugar levels and cannot control them. Both groups received programs: food, mood, exercise, non-smoking, and no drinking. The results showed that the health-promoting behaviors of patients with type 2 diabetes in the blood glucose control group were good. Overall health-promoting behaviors between groups showed statistically significant differences. ($p < 0.5$). In line with the research of Santecha, P., and Lamlung, P. (2020), was found that people with type 2 diabetes who received a health literacy development program were supported in terms of knowledge and skills to care for their health. drug use, exercise, blood level control, and dealing with complications. This is one of the techniques to modify the behavior of people with diabetes who cannot control their blood levels. As a result, people with diabetes have the knowledge and knowledge to manage themselves. Gain confidence and awareness of self-care learning and development to control blood sugar levels.

Conclusion

During the COVID-19 pandemic, people with diabetes had slower follow-up appointments than usual with social distancing measures and government policies. As a result, each hospital needs to receive a limited number of inpatient care. This results in the control of glucose levels. Self-care behaviors may need to be addressed. This self-care activity interests diabetic patients who have come to do activities together. Speak exchange experiences to raise awareness to control blood sugar levels within normal range. By diet, they promote physical activity, abstaining from smoking or staying in smoking areas, knowing the suitable mood relaxation, having the correct prescription medication behavior, and regularly observing symptoms from hypoglycemia and hyperglycemia. Work planning is step-by-step. Providing opportunities for patients to set their own healthcare goals, patients are aware of their healthcare and cooperate in this activity. As a result, the level of knowledge scores after conducting self-care activities of the sample increased. This positively affects the control of the patient's blood glucose levels and gives the patient a better quality of life.

Research recommendations

The limitations of this research are that the activity is limited to 8 weeks, which may prevent patients from fully understanding the content of their knowledge. Some patients need more time to participate in self-improvement activities due to their occupations. This health literacy activity is used in other populations. Research and follow-up should be conducted every 3-6 months to assess the sustainability of health-enhancing behaviors.

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