

The effect of family-centered education on self-care rate in patients with type 2 diabetes

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ABSTRACT

Background and purpose: Diabetes Mellitus is a metabolic disease characterized by increased blood glucose levels. The most important determinant of diabetes control is self-care status of patients. By increasing the knowledge and attitudes of diabetics about self-care, they can be used to control the complications of the disease and improve the quality of life. Hence, empowering the patient and supporting self-care through education is the key to controlling diabetes. The aim of this study was to determine the effect of family-centered education on self-care in patients with type 2 diabetes. **Materials and Methods:** The present study was a pre-and post-semifinal experimental single-group study. 35 patients referred to the Zabol Diabetic Clinic in 2018 who were eligible for inclusion in the study were selected as samples. Demographic and self-care questionnaires were completed in samples of diabetic patients and then interventions were performed in 5 sessions of 60 minutes. After the intervention, the questionnaires were completed again. The data was analyzed by SPSS version 24 software. **Results:** Based on the mean score of self-care before intervention, 56.02 ± 8.11 , after intervention, increased to 67.91 ± 10.91 . This increase in self-care score was statistically significant ($p < 0.001$). **Conclusion:** According to the present study and the positive effect of family-centered education on self-care in diabetic patients, it is suggested that this model can be used by health care providers for the participation of family and patient in health care.

Keywords: family-centered; self-care; diabetes

Introduction

Diabetes Mellitus is a metabolic disorder characterized by increased blood glucose levels. This increase in blood glucose is due to decreased insulin secretion or anemia disorder [1]. Among the types of diabetes, type 2 diabetes is identified as the most common type of diabetes in the allocation of more than 90% of cases [2,3]. The prevalence of the disease in developing and developing countries is increasing day by day, so that diabetes has become a major challenge in community health management, and this challenge is more serious in the Middle

East [4]. According to the International Federation for Diabetes, in 2013, 382 million people worldwide have diabetes, and they are expected to reach 592 million by 2035 [5].

According to statistics released by the Iranian Association for Diabetes in 2009, the number of diabetics in the age group of 15-65 years old was 2,700,000, an increase of 7 million in 2030 [6]. Diabetes is not a cure, but it is emphasized to improve lifestyle in order to control it, so it is recommended that these patients exercise adequate nutrition and medication [7,1]. One of the most important side effects of diabetes is neuropathy, nephropathy, retinopathy, coronary artery disease, cerebrovascular and peripheral vascular disease. Type 2 diabetes is the main cause of retinopathy, lower limb amputation and kidney disease [8]. Age, sex, genetics, alcohol consumption, obesity, dysplasia, hypochlosterolemia, and hypertriglyceridemia are one of the most important risk factors for diabetes [9]. The most important determinant of diabetes control is self-care status of individuals [10].

Self-care is all the activities that individuals do individually in order to maintain their own health and well-being [11]. To self-

Access this article online

Website: www.japer.in

E-ISSN: 2249-3379

How to cite this article: Hamid Reza Sheikhi, Mohammad Amini Heydari, Maryam Soleimani, Ali Reza Sheikhi, Hadis Mastaelizadeh, Farhad Naderyanfar. The effect of family-centered education on self-care rate in patients with type 2 diabetes. *J Adv Pharm Edu Res* 2019;9(S2):89-93.

Source of Support: Nil, Conflict of Interest: None declared.

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care in diabetic patients, the proper and timely use of insulin, dietary dips Regular sports activities are identifying symptoms of increasing or decreasing blood glucose, taking regular medications, taking care of the legs, and improving the quality of life ^[12]. Any defect in self-care behaviors leads to increased complications from the disease, and providing self-care behaviors improves the quality of life, reduces hospital admissions and reduces the cost of disease ^[13,14].

Low levels of self-care in diabetic patients are a major problem that has challenged healthcare providers. The results of most studies indicate that patients with diabetes do not have proper self-care status, and this is due to the fact that the results of diabetes control greatly depend on the self-care behaviors of patients along with other care therapies ^[15]. The results of a study in Yazd showed that people with lower educational level had less skill to deliberately seek self-care ^[16]. In a study that assessed the awareness of diabetic patients regarding their self-care importance, the results indicated that 76% of the patients have low or moderate awareness of self-care ^[15]. By increasing the knowledge and attitudes of diabetics about self-care, it can be used to control disease complications and improve quality of life. In other words, in order for a diabetic patient to be able to take care of himself, he needs to look at the illness and increase his knowledge and skills about his illness, so empowering the patient and supporting self-care through education is the key to control diabetes ^[17]. Given the role self-care plays in controlling the disease, training to increase the knowledge and skills of diabetic patients seems necessary. Various studies have examined different educational methods based on nursing model, problem solving, family education, and e-learning, which has been associated with different outcomes.

It is obvious is that different educational methods do not have the same effects and their effects must be measured ^[18]. As mentioned, one of the teaching methods is family-centered education. The family as the most fundamental element of the community is responsible for providing proper care and health behaviors to the patient. Teaching family members can play a very useful role in controlling and even preventing illness, as there is a strong relationship between the family and the health status of its members.

Materials and method

The present study is a semi-experimental single-group study with pre-test and post-test. The aim of this study was to determine the effect of family-centered education on the level of self-care in patients with type 2 diabetes. In this study, 35 patients with type 2 diabetes in 2012 were selected by random sampling method. The type II diabetic patients who suffer this disease since 1 year from the age range of 15-65 years old, living in Zabol city, having literacy, communication ability, alertness, satisfaction to participate in the study were criteria for entering the study. The lack of willingness to continue the program, participating in another educational program at the same time, dropping out, admitting, were criteria for dropping

out of study. Also, the ethical considerations included in this study included freeing the subjects to enter and leaving the study, assuring them of confidentiality of their information and obtaining oral consent. The instruments used in this study included demographic information questionnaire and self-care questionnaire in diabetic patients.

Demographic information questionnaire: This form includes age, sex, marital status, employment status, economic status, location, educational level, duration of the disease.

Inventory self-care in patients with diabetes: This is a self-report questionnaire of 15 questions that measure self-care patients during seven days and tells encompasses various aspects of the treatment regimen for diabetes include diet, general and diet have diabetes ^[5], Sports (2 questions), blood glucose test (2 questions), insulin or anti-diabetes pills (1 point), foot care (4 questions) and smoking (1 question). On this scale, patients are ranked in the following categories based on the score they earn:

- ✓ Poor self-care (0 to 33)
- ✓ Medium self-care (34 to 67)
- ✓ Strong self-care (68 to 99)

In Hamadzadeh et al. (2012), content validity (CVI) of the questionnaire was confirmed by 8 faculty members, mean of which was 84.9 and its reliability was 0.88 by Cronbach's alpha ^[20].

After obtaining permission from the authorities of Zabol University of Medical Sciences, the researcher collected the data. The researcher, referring to the diabetes clinic in Zabol city, selected the number of subjects eligible for the study according to the sample size required for the study. In this way, the researcher, after explaining the goals of the research and how it was done, tried to satisfy the people to participate in the study. Then, the researcher provided the questionnaire for self-care assessment to those who were willing to participate in the study to determine their self-care status according to the score obtained from the questionnaire. After identifying the self-care status of the subjects, all people who had a strong self-care status according to the score in the questionnaire were excluded from the study and eligible individuals replaced them.

After the pre-test, education based on a family-centered empowerment model was conducted in four stages of perceived threat, problem solving, educational participation and evaluation. The interventions were conducted by the researcher at the patient's home in five 60-minute sessions in family meetings with the participation of the patient and the family members.

After 3 months from the last training session, the subjects will be invited to the Diabetes Clinic and self-care assessment questionnaires will be provided again. At the end, their contributions will be appreciated and appreciated. Data was collected by SPSS version 24 and analyzed by descriptive statistics (table, mean, standard deviation) and inferential statistics (paired t-test).

Findings

The demographic data of patients showed that 45.7% of the participants were male and 54.3% were female. The mean age of participants was 54.86 ± 7.53 . Other demographic information is presented in Table 1.

Table 1: Demographic characteristics of patients

Demographic characteristics	Number (percent)
Age	54.86±
Length of illness	7.59±4.99
Gender	
Female	(54.3)19
Male	(45.7)16
Marriage status	
Single	(0)0
Married	(100)35
Employment status	
Unemployed	(68.6)24
State work	(31.4)11
Self-employed	(0)0
Economic status	
Weak	(51.4)18
medium	(48.6)17
Good	(0)0
place of living	
City	(68.6)24
Village	(31.4)11
Education	
Under the diploma	(68.6)24
Diploma	(17.1)6
Higher than diploma	(14.3)5

Table 2: Comparison of self-care scores and its domains before and after intervention

Variable	Pretest	Post-test	p-value
	SD±Mean	SD±Mean	
Overall self-care score	86.02±8.1	67.91±10.91	0.000
Nutrition	19.65±4.55	24.51±4.53	0.000
Physical activity	3.17±2.88	5.57±2.98	0.000
Blood glucose control	2.97±2.16	6.62±3.99	0.000
Medical behavior	5.28±1.2	5.74±1.46	0.062
Take care of the legs	23.94±5.32	24.45±4.64	0.619

Comparison of pre-test and post-test self-care scales and its dimensions indicate that the use of cigar did not change anyway.

Also, the scores of other dimensions of self-care are listed in Table 2.

Discussion and conclusion

Increasing the awareness of diabetic patients about various issues of the disease, including self-care, increases life expectancy and adaptation of the individual reduces the cost of treatment [21]. Also, the continuous pursuit and implementation of self-care behaviors by diabetic patients and family involvement of patients is important in this. Can prevent or delay the acute and chronic complications of the disease [22]. In this regard, the present study aimed to determine the effect of family-centered empowerment model on self-care of type II diabetic patients. The results of this study indicated a significant increase in the self-care behaviors of diabetic patients after intervention. These results were consistent with studies by Shabihi et al., [23] and Hemmati et al. [24].

Shabbi et al. showed that self-care education improves the self-care behaviors of diabetic patients [23]. Also, Hemati and colleagues studied the positive impact of education on improving self-care behaviors [24]. Razmara et al. determined the effect of family-centered education on self-care in type 2 diabetic patients. The difference between self-care scores and some dimensions (nutrition, physical activity, blood glucose control and foot care) in intervention and control group was significant. Care in the field of foot care is contrary to the findings of this research. Perhaps the strength of the subjects studied in this dimension before entering the study is due to this difference.

Razmara also showed that there was no significant difference between the scores of medication behaviors after the intervention between the two intervention and control groups ($p > 0.05$), which was consistent with the results of our study [19]. Sadeqi et al., in their study showed the impact of two teaching methods based on patient-centered and family-centered empowerment models in patients with type 2 diabetes was studied and the results of the study showed positive effects of both methods, but family-based care was associated with a higher reduction in glycosylated hemoglobin, which is The approval of the family's important role in controlling diabetes is in line with our study [25]. This study concludes that the implementation of educational methods based on the family of patients with type 2 diabetes can improve the self-care behaviors of patients. Therefore, the use of this model by health care providers for the participation of family and patient in applied therapeutic care. Also, according to the results of this study, the use of family-based education models in health policies related to diabetes can play an important role in increasing community health.

Acknowledgement

In this regard, we thank the Vice-Chancellor of Zabol University of Medical Sciences for financial support and also all

the honorable authorities of Zabol University of Medical Sciences who helped us in this research.

Conflict of Interest

There are no conflicts of interest.

References

1. FallahTafti B, Vaezi A, Moshtagh Z, Shamsi F. The assessment of Barriers to the Self-care Behaviors in Type 2 Diabetic Patients of Yazd Province in 2014. *TB*. 2016;15(3):115-29.
2. Rafii F, Masroor D, Haghani H, Azimi H. The Comprison of Exercise as a Copplementary Therapy and Walking Exercise on the Fasting Blood Glucose of People with Type 2 Diabetes. *J Urmia Nurs Midwifery Fac*. 2017;15(3):218-29.
3. Sanjari M, Hedayati M, Azizi F. Prevalence of Type 2 Diabetes Mellitus in 3-19 Age Group in East of Tehran in 2001. *IJEM*. 2004;6(2):119-26.
4. ghahremani A, hemmati M, alinejad V. Effect of Self-Efficacy-Based Motivational Interview on Laboratory Results in Type Ii Diabetes. *J Urmia Nurs Midwifery Fac*. 2017;15(9):688-95
5. Seuring T, Archangelidi O, Suhrcke M. The economic costs of type 2 diabetes: a global systematic review. *Pharmacoeconomics*. 2015;33(8):811-31.
6. Fathabadi J, Izaddost M, Taghavi D, Shalani B, Sadeghi S. The Role of Irrational Health Beliefs, Health Locus of Control and Health-Oriented Lifestyle in Predicting the Risk of Diabetes. *Payesh Health Monit*. 2018;17(2):169-78.
7. KhosraviBonjar A, Saravani Aval S, Saleh Moghadam AR, Delaramnasab M, Shahdadi H, Abdollahimohammad A, Bazi A. The Effect OfE_Learning On Adherence To The Therapeutic Regimen In Patients With Type 2 Diabetes. *J Diabetes Nurs*. 2017;5(2):95-109.
8. Ghandour R, Mikki N, Abu Rmeileh NME, Jerdén L, Norberg M, Eriksson JW. Complications of type2 diabetes mellitus in Ramallah and al-Bireh: The Palestinian Diabetes Complications and Control Study (PDCCS). *Prim care diabetes*. 2018;5(3)1-11.
9. Paengsai N, Jourdain G, Chaiwarith R, Tantraworasin A, Bowonwatanuwong C, Bhakeecheep S, cresse TR, Mary JY, Salvadori N, Kosachuhanun N. Incidence and clinical outcomes of diabetes mellitus in HIV-infected adults in Thailand: a retrospective cohort study. *BMC Public Health*. 2018;18(1):1079-93.
10. shabibi P, mansourian M, abedzadeh M S, sayehmiri K. The Status of Self-Care Behaviors in Patients with Type 2 Diabetes in the City of Ilam in 2014. *sjimu*. 2016;24(2):63-71.
11. EbadiFardazar F, Hedari H, Solhi M. Relationship between self-care behavior and health locus of control in patients with type II diabetes. *RJMS*. 2016;23(146):84-92.
12. AbbasZadehBazzi M, Karimiaval M. Relationship between Health Literacy and Self-Care Behaviors in Diabetic Patients Type II Referred to the Center of Diabetes Control and Prevention in Zabol. *Journal of Health Literacy*. 2018;3(1):10-9.
13. Parham M, Rasooli A, Safaeipour R, Mohebi S. Assessment of effects of self-caring on diabetic patients in Qom diabetes association 2013. *Journal of Sabzevar University of Medical Sciences*. 2014;21(3):473-84.
14. Ataei E, Dalvandi A, Nikpajouh A. The effect of patient education about self-care behaviors with media clips on self-care among patients with permanent pacemaker. *Cardiovascular Nursing Journal*. 2013;2(3):6-15.
15. Solhi M, Hazrati S, Shabani M, Nejaddadgar N. Use of PRECEDE Model for Self-care Educational Need Assessment Among Diabetic Patients . *J Diabetes Nurs*. 2017;5(4):295-306.
16. vaezi A A, Fallah B, MoshtaghEshgh Z. The effects of basic conditioning factors on self-care behaviors of patients with type 2 diabetes referred to Yazd Research Center, 2014 . *JSSU*. 2018;25(10):770-9.
17. Mahdi H, Maddah SM B, Mahammadi F. The Effectiveness of Self-Care Training on Quality of Life Among Elderlies With Diabetes . *IJRN*. 2016;2(4):32-9.
18. Ahmadi Z, Sadeghi T, Loripoor M, Khademi Z. Comparative Assessment the Effect of Self-care Behavior Education by Health Care Provider and Peer on HbA1c Level in Diabetic Patients. *IJEM*. 2017;19(3):144-50.
19. Razmaraei S, HemmatiMaslampak M, khalkhali H. The effect of family-centered education on self-care in patients with type 2 diabetes. *J Urmia Nurs Midwifery Fac*. 2016;14(2) :118-27.
20. Hamadzadeh S, Ezatti ZH, Abedsaeidi ZH, Nasiri N. Coping Styles and Self-Care Behaviors among Diabetic Patients. *IJN*. 2013;25(80):24-33.
21. Allahyari J, Shirani N, Mansouri A, Sargolzaei MS. Effect of continuous care model on self-care behaviors in patients with diabetes. *J Diabetes Nurs*. 2017;5(4):332-40.
22. Ghotbi T, Maddah SSB, Dalvandi A, Arsalani N, Farzi M. The effect of education of self care behaviors based on family-centered empowerment model in type 2 diabetes. *Advances in Nursing and Midwifery*. 2012;23(83):43-50.
23. Shabibi P, Zavareh MSA, Sayehmiri K, Qorbani M, Safari O, Rastegarimehr B, Mansourian M. Effect of educational intervention based on the Health Belief Model on promoting self-care behaviors of type-2 diabetes patients. *Electron physician*. 2017;9(12):5960-8.
24. HemmatiMaslampak M, Razmara S, NiazkhaniZ. Effects of Face-to-Face and Telephone-Based Family-Oriented Education on Self-Care Behavior and Patient Outcomes in Type 2 Diabetes: A Randomized Controlled Trial. *J*

Diabetes Res. J Diabetes Res. 2017. doi:
10.1155/2017/8404328

25. sargazi shad T, kermansaravi F, navidian A. Effect of the Family-Centered Empowerment Model on Quality of Life and Self-Efficacy in Adolescents With Type 1 Diabetes Referring to the Ali Asghar's Clinic in Zahedan , 2016. IJEM. 2018;19(5):330-9.